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ABSTRACT

The knowledge needed by nurses to educate patients and their caregivers on medication use was examined to provide policymakers, practitioners, and others with the information needed to plan nursing education programs in England. The study focused on the following topics: the contributions of nurses to medication education; their preparation for the role of educating patients about medication use; and the impact of contextual factors on nursing education and clinical practice related to educating patients on medication use. The main data collection activities were as follows: (1) an extensive literature review; (2) case studies of three sites (sites offering adult nursing/elder care, mental health nursing, and specialist pathways in general practice nursing and community nursing in homes); and (3) a national survey examining learning outcomes, assessment strategies, and other curriculum design and delivery factors related to pharmacological knowledge, communication, and patient education skills. The following were among the key conclusions: (1) nurses need more education in pharmacology; (2) pharmacology should be taught in relation to its

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application in nursing practice; and (3) given the extensiveness and dynamic nature of pharmacology knowledge, a balance of formally taught programs, self-direction, and updating is needed. (Contains 66 tables/figures/boxes and 99 references.) (MN)

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RESEARCHING PROFESSIONAL EDUCATION

**Nursing and Medication
Education: concept analysis
research for curriculum and
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English National Board for
Nursing, Midwifery and Health Visiting



RESEARCHING PROFESSIONAL EDUCATION

*A series from the English National Board
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Nursing and Medication Education: concept analysis research for curriculum and practice development

Sue Latter
Paul Yerrell
Jo Rycroft-Malone
David Shaw

London, 2000

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Abbreviations

ACB	Actual curriculum base
APB	Actual practice base
CAL	Computer-assisted learning
CFP	Common foundation programme
CMHN	Community mental health nursing
CMHT	Community mental health team
CN	Community nursing in the home
CPD	Continuing professional development
CPDM	Curriculum and practice development matrix
CS	Communication style
EB	Evidence-based
GPN	General practice nursing
HCA	Health care assistant
HV	Health visiting
iAction	Improvised action
I/E	Intuition/experiential
MDT	Multidisciplinary team
MHB	Mental health branch
MQM	Maturity quotient matrix
MT	Medication therapy
OT	Occupational therapy
OHN	Occupational health nursing
PA&C	Patient attributes and context
PC	Patient career
PEB	Potential evidence base
PES	Patient education skills
PK	Pharmacology knowledge
SPT	Specialist practice teacher
T	Transitional

Foreword

The English National Board for Nursing, Midwifery and Health Visiting is delighted to publish this report as the fifteenth in its successful series: *Researching Professional Education*.

The aim of this series is to make widely available the results and implications of research commissioned by the Board. The series provides key stakeholders, including policy makers, managers, practitioners, researchers and educators, with access to relevant and sound research from which to plan educational developments.

Concept analysis research is about establishing the maturity of nursing concepts. This project is about:

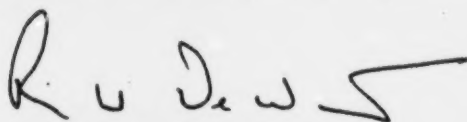
- the maturity of the concept of medication education in nursing
- its antecedent in educational preparation and its application in practice
- the underlying knowledge and clinical experience that forms the basis of actions nurses take with patients, clients and carers and their prescribed medication.

The report contains detailed evaluation of nurses' contribution to medication education, preparation for this role, and the impact of contextual factors on education and clinical practice. The development of concept analysis research as a tool for diagnosing and prescribing routes for curriculum and practice development is also explored. This exploration points towards the potential transferability of the approach to the analysis and development of other nursing concepts central to nurse education and practice.

The report will be of value to those involved in the planning and delivery of health care professional higher education programmes, educationalists and practitioners concerned with clinical practice development and health care researchers, particularly those interested in nursing concepts, theoretically and practically.

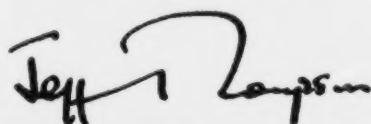
More specifically this report will be of interest to those responsible for teaching and researching pharmacology, communication skills and patient education within nursing and health care practice.

The researchers' conclusions are of importance to all those who are involved in the development of nursing education. The Board will consider the outcomes of the research in relation to policy development.



Professor Ron De Witt

Chairman, English National Board for Nursing, Midwifery and Health Visiting



Professor Jeff Thompson

Chair, Research and Development Committee, English National Board for Nursing, Midwifery and Health Visiting

London, 2000

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1.1 The health care policy and practice context

'The context of care is changing. A new nursing, midwifery and health visiting strategy is needed to help nurses, midwives and health visitors respond to changes in society and in patterns of disease, to the possibilities created by developments in pharmaceuticals and technology, to increasing public expectations and to a challenging new policy agenda ... People are living longer, healthier lives. The number of elderly people in the population is rising. The demand for nursing care to help people with degenerative illness or disability – particularly to enable them to remain in their homes and enjoy as much independence as possible – is increasing. The demand for support in the community for people with chronic and life threatening illness, or for those recovering from surgery or acute hospital care, will continue to rise.' (DoH, 1999a: 7)

The above quotation encapsulates the issues underpinning the rationale for the Nursing And Medication Education (NAME) Project. Changes in patterns of disease, social and demographic trends, education and health policies and consumer expectations about health services, it was argued, necessitated ongoing detailed and systematic evaluation of nurse education and its adequacy in preparing nurses for practice.

Such social demographic trends pointed towards an increasing elderly population and a rise in long-term health problems requiring continuous medication. Meanwhile, changes in policies and patterns of health care delivery for these groups highlighted the nursing profession's important role in educating patients/clients and their carers in the use of their medication.

The importance of medication education related to several issues in the context of health care policy. The drive to reduce NHS waiting lists, coupled with advanced technology, had resulted in faster patient throughput in the acute sector, and an increase in self-care and nursing care in the community. The emphasis on health promotion and disease prevention outlined in *The Health of the Nation* (DoH, 1992), and reiterated in *Saving Lives: Our healthier nation* (DoH, 1999b), as well as the growing acknowledgement of the importance of consumer expectations and aspirations, highlighted the need for nurses to recognise the importance of proactive information and education about medication.

'... carers do not want to be passive recipients of professional treatment but to work in partnership with nurses, midwives and health visitors. Advances in medical science and biotechnology have led many people to think of high-technology hospital-based medicine as a panacea. Yet the majority of health care takes place outside hospital in people's homes and in clinics and surgeries. Nurses, midwives and health visitors have an important part to play not only in educating public expectations but also in improving access to services and ensuring patients benefit from care and treatment.' (DoH, 1999a: 9-10)

The requirement for health care professionals to base their practice on the best possible available evidence was also clear. The importance of evidence-based practice as a means of delivering effective and efficient health care was endorsed as an integral component of clinical governance in *The New NHS* (DoH, 1997). The implementation of clinical governance within the NHS was a central feature of Government health care reforms outlined in this white paper, with the aim of ensuring individual and organisational accountability for quality health care that is clinically effective and evidence-based. Key dimensions of clinical governance include

CHAPTER 1 organisational responsibility for setting clinical standards, integration of quality assurance systems such as clinical audit, and evidence-based practice delivered through a supportive infrastructure. Clearly, such dimensions are applicable to the practice of educating patients about medication.

Traditional role boundaries between professionals were also re-examined to ascertain where they were not in the interests of delivering patient-focused, flexible, accessible and responsive care. Increasingly, this led to the creation of more autonomous and extended nursing roles, as well as the introduction of nurse prescribing. This drive towards nurse-led care and the changing opportunities for and demands on nurses inevitably created the requirement to acquire knowledge that could be safely and effectively applied in practice.

These new demands also had to operate within methods of service delivery, which were increasingly characterised by multidisciplinary and multi-agency collaboration. This also required nurses to work closely with others to ensure a co-ordinated approach to patient education.

Nurse education had responded to these changes. There have been significant changes in pre-registration education in the past decade, with the introduction of Project 2000 (UKCC, 1986) and an increase in degree-level programmes. There has also been a proliferation of post-registration education programmes approved by the Board to prepare nurses for specialised practice, and to enhance academic qualifications.

To competently provide education to patients about medication, nurses need pharmacology knowledge, as well as communication and patient education skills. The knowledge and skills necessary to practise a range of behavioural options should be clearly articulated and delineated within a programme curriculum. In accordance with the requirement to provide clinically effective health care, such knowledge and skills must also be based on the best available evidence. This ensures that educational curricula conform to an agenda for 'educational governance' that facilitates effective medication education to ensure informed choice and promote concordance, thus maximising health gain.

'A consistent approach to pre-registration nurse education is also needed if we are to open up more flexible pathways into and within nursing careers ... [and] ... we propose to agree outcomes for the end of each of the three years of the education programme in England to ensure that there is a greater consistency in the knowledge and skills that students have at the end of each year of the educational programme ... [and] ... to develop nationally consistent benchmark standards for nursing and midwifery to ensure that nurse education provides well-trained nurses equipped with the skills needed for the new, modern NHS.' (DoH, 1999a: 29)

1.2 Potential benefits of medication education

Enhancing patients' ability to make informed choices and to administer medication safely would result in significant benefits for both patients and the NHS. Currently, non-adherence to medication regimens has financial implications for the NHS in terms of unnecessary treatment episodes within both primary and secondary care. Merkatz and Conig (1992) estimated that 10% of hospital re-admissions and 23% of nursing home admissions were related to elderly patients' inability to administer their prescribed medication according to instructions. Similarly, Forman (1993) found a strong correlation between non-compliance and higher rates of illness relapse. Tetterrell (1993) also commented on the costs of non-adherence, and highlighted the increase in related iatrogenic disease as an increasing concern. Non-adherence might also impact on patients' quality of life in other ways, since informed, safe administration of medication has been shown to increase self-esteem and independence (Edwards, 1995).

Patient education about medication is a salient and important prerequisite for its safe and effective administration. Information about medication is thought to directly influence

adherence (Bowles, 1996), and good communication between patient and health care provider has been shown to have a positive influence on compliance (Crane et al., 1996). Arguably, patients who are not informed about such aspects of their medication as correct dosage, timing, likely therapeutic effects and possible side-effects, are unlikely to successfully adhere to prescribed regimens. Additionally, patient education might be important in fostering informed choices not to take medicines as prescribed. This is particularly significant when the cost:benefit ratio is not clear-cut. For example, some neuroleptic medications can induce significant side-effects in addition to the potential for therapeutic outcomes.

1.3 Research into nurse education and practice

A literature review revealed a lack of systematic research evaluating nurses' knowledge and practice in relation to patient education about medication. The studies identified restricted their focus to specialist nurses (see Donaghy, 1996) or to patient education in relation to other topics such as post-operative recovery. Here, patient education was provided by specially trained personnel in one-off, small-scale evaluative studies (see Wilson-Barnett and Osborne, 1983). Whilst such studies suggest that nurses may make an effective contribution to 'recovery' through patient education, little is known about whether nurses, more generally, have the required knowledge, skills and ability to educate patients about medication.

Some authors have asserted that nurses are not fulfilling their potential contribution to patient education, and that a lack of knowledge and skills may be at least partially responsible for this. Syred (1981), Elkind (1982) and Parker et al. (1983) suggested that nurse education was not adequately preparing nurses for this role. In the 1990s, claims were made that health care professionals lacked sufficient knowledge to engage in patient education (e.g., Noble, 1991). With specific reference to medication education, Jeannes and Taylor (1992) and Ashurst (1993) reported that a large proportion of nurses have limited knowledge of pharmacology. Similarly, a small-scale study by While and Rees (1993), which focused on the proposed formulary for nurse prescribing, concluded that community nurses had limited pharmacology knowledge. White (1994), among others, argued that this issue must be addressed urgently.

Research into what constitutes 'adequate pharmacology knowledge' has tended to focus on the avoidance of drug administration errors. However, levels of pharmacology knowledge have only been used as evaluative criteria for the effectiveness of programmes of education, as opposed to analysing their application for, and in, practice (e.g., Martin, 1994; Werab et al., 1994; Gillham and Chu, 1995; Cartwright, 1996; Flynn et al., 1996).

Pharmacology knowledge alone is an insufficient base on which to undertake a medication education role. The acquisition and application of communication and education skills are also fundamental to this process. In her review of patient education over the past 25 years, Redman (1993) suggested that future developments should focus on individualised education which satisfies patients' goals, is integrated with all care, and works through shared decision-making.

Chapter 3 provides further discussion of the pharmacology knowledge, communication and education skills, together with their evidence base, required for a medication education role.

In light of the above, the importance of a systematic analysis of the preparation and role of nurses in patients', clients' and carers' medication education was, and still is, apparent. A research project was therefore commissioned by the English National Board for Nursing, Midwifery and Health Visiting (the Board) to undertake such an evaluation related specifically to nurses' preparation and practice in this area.

This report is an edited version of the full report presented to the Board. Copies of the appendices, including the research instruments, may be obtained from the authors. For the sake of brevity, patients, clients and carers, with whom nurses interact, are generically referred

to as patients unless there is specific reference to clients in mental health settings or carers in carers' focus groups. The term medication is used in preference to drugs, since drugs comprise only one component of a medication.

1.4 Research aims

The original aims, as conceived by the Board, identified two principal dimensions for the project:

- to deconstruct and understand the constituent processes of the nurse's role in medication education
- to deconstruct and understand the nature of the requirements for, and current provision of, educational preparation for such a role.

Arguably, the second aim is the antecedent to the first, yet an understanding of the first needs to precede the second. The complexity of the conceptual relation between these 'deconstructions' provided a third dimension to the original aims. The aims below reflect the research team's approach to 'unpacking' such conceptual dilemmas and providing a resolution to the tension created by the relation of the dimensions.

- To evaluate the nurse's contribution in the education of patients/clients and carers in the use of medication by:
 - constructing a conceptual framework that explores *what counts as* medication education
 - illuminating, through literature reviews and 'expert' consensus, the nature of the evidence and/or knowledge that contributes to such a conceptual framework and its constituents.
- To evaluate the effectiveness of nurses' application of pharmacology knowledge, communication and education skills within practice settings by:
 - illuminating the factors, individual, professional, educational, clinical and organisational, that operate to facilitate or inhibit such application in practice.
- To evaluate the effectiveness of education curricula in preparing nurses for a medication education role by:
 - illuminating the factors, individual, professional, educational, clinical and organisational, that operate to facilitate or inhibit such preparation for practice.
- To provide a national overview of curriculum design and delivery factors related to pharmacology knowledge and communication and education skills within pre- and post-registration programmes.

The fulfilment of these aims was considered to be a critical step in resolving the tension between, and understanding the relation of, preparation and practice: *what counts as preparation for medication education that counts as medication education*.

1.5 Organisation of the report

Chapter 2 outlines the conceptual and methodological focus within which the research aims were addressed. Chapter 3 describes the concept analysis approach that underpinned the literature review and the research methods utilised in the study. Details of the literature review and pre-study-site focus groups are outlined, as well as an overview of the evidence and/or knowledge base underpinning the constituents of medication education. As systematic reviews of the literature form an essential ingredient to the process of concept analysis research, Chapter 3 also describes the methodology of the study. In this report reviewing the literature is part of the methodology, rather than the means of providing a theoretical and evidential background to the subject under review.

Chapters 4, 5, and 6 detail the findings from each of three sites studied. Reconstructions of the theoretical conceptual framework, outlined in Chapter 2, are formulated, based on the findings from the clinical areas and educational institutions of the study sites. Chapter 7 demonstrates and recommends the application of a concept analysis approach as a prerequisite for curriculum planning. *Actual practice base* levels and *actual curriculum base* levels are juxtaposed independently with the *potential evidence base* levels derived from the literature review using a matrix format. *Practice* and *curriculum maturity quotient matrices* are developed as a means of conceptualising a focus and strategies for education and practice development.

2.1 What counts as medication education

The NAME Project conceptually and methodologically focused on what counts as medication education. This required identification of the characteristics, antecedents and consequences of such a concept and the contextual conditions in which it takes place.

This chapter introduces this process by outlining:

- some underlying assumptions that informed the initial proposal for the project
- the organisational framework that represented the relation between the characteristics of medication education and its implementation
- the clarity of the concept and its constituent dimensions.

Also, it discusses the challenge of understanding the knowledge and experience underpinning nurses' actions and behaviour options, and raises fundamental questions about the relation of education and practice that provided the project's methodological and analytical template.

The construction of the conceptual framework for medication education used as its organising structure a dramaturgical approach, in which nurses' interaction with their patients was seen as an improvised action (iAction) based on their own educational experiences and their own and the patients' clinical experiences (after Goffman, 1969).

Nurses' iActions in relation to their role in medication education were considered as behaviour options, based on skilled assessments of *patient scenarios* and professional knowledge-based *clinical judgements*. The *patient scenario* was constructed from the patient's psychosocial attributes, the point in their career in the health care system, and their current medication therapy. *Clinical judgement* was constructed directly from the nurse's pharmacology knowledge, assimilated patient education skills and communication style and, indirectly, knowledge of the pathophysiology of clinical conditions. Similarly, the clinical context operated on the nurse's improvisation by facilitating or militating against optimum performance in this interaction process (Figure 2.1).

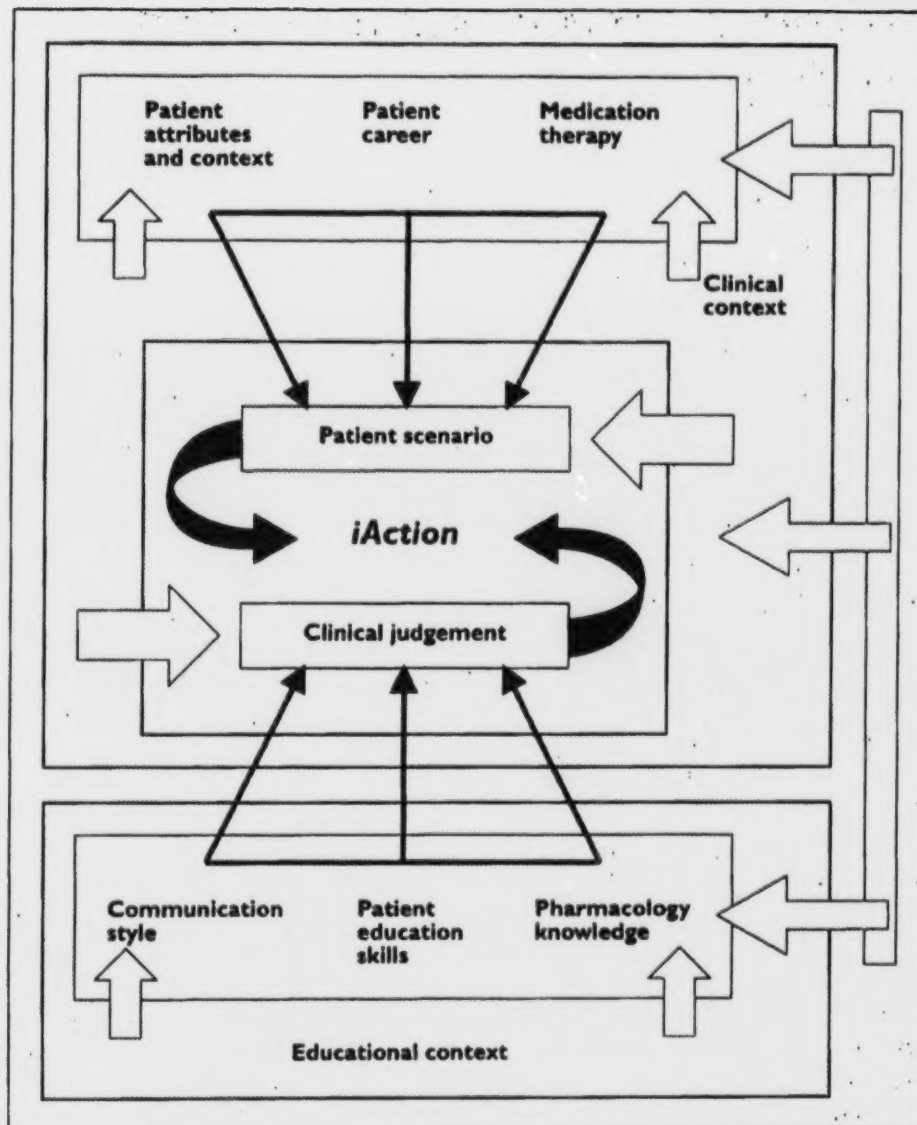


Figure 2.1: Conceptual framework of improvised action

The focus in such a conceptual framework was what counts as the practice of iAction for medication education, derived from Harré's (1977) ethogenic approach. The central concern for this participatory social psychology is to account for actions within social episodes, focusing on actors' intentions, beliefs about the behaviour that allows them to reach their goals, and awareness of the rules governing such behaviours. In this approach (Harré, 1978), a distinction is made between the diachronic, episodic analysis of the stages and processes by which social practices and institutions change and are changed, and the synchronic, 'snapshot-in-time' analysis of such practices and institutions.

The sequence of actions that make up the episode is given meaning by our common-sense understanding of the world. Such understanding, generated by our social practices, contributes to the meaning system of how acts are achieved within an episode. The speech accompanying the action makes it intelligible and justifies its position in the episode.

Thus, the focus on iAction has both diachronic (the actions, the accounts, the revealing of a commonly understood meaning system for an episode or combination of episodes) and synchronic ('snapshot-in-time') dimensions. That it can occupy both functions is tenable, since

the quality of clinical practice is both an ongoing outcome measure of the educational episodes underpinning the skill of assessment and clinical judgement, and the reference point that helps construct an agenda for curriculum planning. This raised two related questions:

- How do educational episodes contribute to the quality of practice?
- How does the observed quality of practice relate to the debate of what theoretical knowledge to include within the curriculum and its application in the practice context?

Is the advice to 'take one red pill with lunch' the product of skilled assessment and judgement, or demonstration of a limited ability to reconstruct a knowledge base to inform such processes? Or ...? And so on. Here, the problem is knowing which scenario fits. As this project demonstrates, a local understanding will only emerge if the causal chain linking the educational institution to the clinical area where practice is assessed is known.

2.2 The conceptual framework

The conceptual framework, described in greater detail in Chapter 3, was grounded theoretically in this study by:

- reviews of the literature on patient education, health promotion and pharmacology knowledge
- concordance, (the term concordance refers to the process of therapeutic interaction; the terms compliance and adherence refer to the outcome of the interaction (Madden, 1990) and reflect the usage in this report; also terms are used consistent with original authors' preference for terminology)
- pre-study-site focus groups with 'experts'
- the *theoretical sensitivity* of the research team that derived from their preparation for this project – their specific and more general research, educational and clinical experiences, the interrelations between these areas and the interrelationships between team members.

Each sub-component (*patient attributes and context; patients career; medication therapy; communication style; patient education skills and pharmacology knowledge*) contributing to the components *patient scenario* and *clinical judgement*, was considered to have its own content list derived from the above reviews and experience. The contingent relations between the components of the framework were explored by analysis of the following events using qualitative research:

- A. Observation of clinical practice
- B. Post-observation interviews with nurses
- C. Post-observation interviews with patients/clients
- D. Observation of educational episodes
- E. Post-observation interviews with lecturers
- F. Post-observation interviews with student nurses
- G. Focus groups with lecturers and practitioners
- H. Focus groups with carers
- I. National survey of nurse education institutions.

The observation and analysis of practice illuminated both the contents of the sub-components, which contribute to the *patients scenario* and *clinical judgement*, and the boundaries of the iAction. Post-observation interviews with nurses and patients contextualised the limits of performance in terms of the clinical environment and the patient's clinical condition. From this, it was possible to speculate on the impact (or not) of prior education on this example of practice. Collating evidence from these observation events built a picture of the issues and delineated the concepts to be addressed by educationalists.

The observation of educational episodes and their subsequent analyses illuminated the inclusion and intended contribution of the sub-components which theoretically, and more directly, make up knowledge-based *clinical judgement*, and indirectly the assessment of *patient scenarios*. Post-observation interviews with nursing students and lecturers contextualised the mechanisms for applying such theory to practice, for both novice and experienced practitioners. It was then possible to speculate on the anticipated iAction from this corroborated understanding of the curriculum.

Events A, B and C contribute to a practice-reality and D, E and F to an education-reality framework. These are partial replications of the theoretical framework (Figure 2.1). Focus group events (G and H) and the national survey (I) provided further insight into these conceptual frameworks. Chapters 3 to 6 provide fuller detail.

The development of the conceptual frameworks used the sub-processes of concept analysis, identification, development, comparison and delineation around the focus of the framework – the iAction required for medication education. Where possible, the principles of concept analysis as developed in epistemological, logical and linguistic philosophy, summarised by Morse et al. (1996a), were also applied:

- epistemological – the concept is clearly defined and well-differentiated
- logical – the concept is systematically and coherently related to others
- pragmatic – the concept is capable of operationalisation
- linguistic – the concept is appropriate to its use in context (Morse et al., 1996a).

2.3 'Take one red pill with lunch'

To illustrate how these processes might operate, a brief example is given here. 'Take one red pill with lunch', as iAction, might be the product of skilled assessment and judgement. The nurse's empirical formulation of the *patient scenario*, from its sub-components and their content lists, could, for example, be constructed as in Figure 2.2, although such a construction might not completely match the theoretical framework.

Alternatively, the formulation of the *patient scenario* from its components might be a function of contextual factors, with limited assessment of *patient attributes and context*, *patient career* and *medication therapy*, and with little application of underlying *communication style*, *patient education skills* and *pharmacology knowledge*. Here, the content lists of the components would be minimal. Contextual factors of acute ward settings might limit the iAction as, for example, in Figure 2.3.

A judgement of the quality of iAction is implicit in these hypothetical scenarios. Actual episodes of practice and educational preparation are evaluated in Chapters 4, 5 and 6. These evaluations are referred to as *actual practice base* levels and *actual curriculum base* levels.

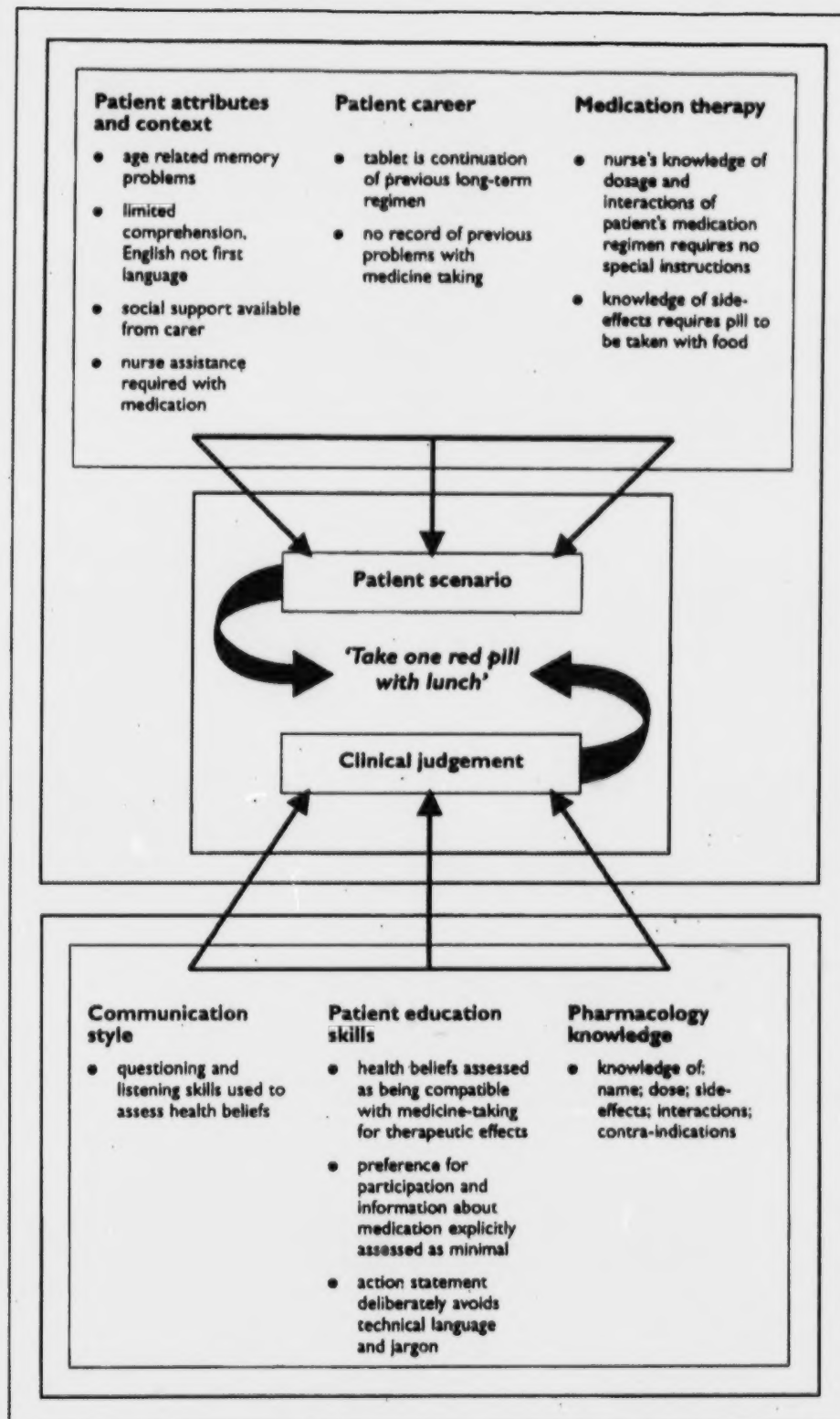


Figure 2.2: Component use in skilled assessment and judgement

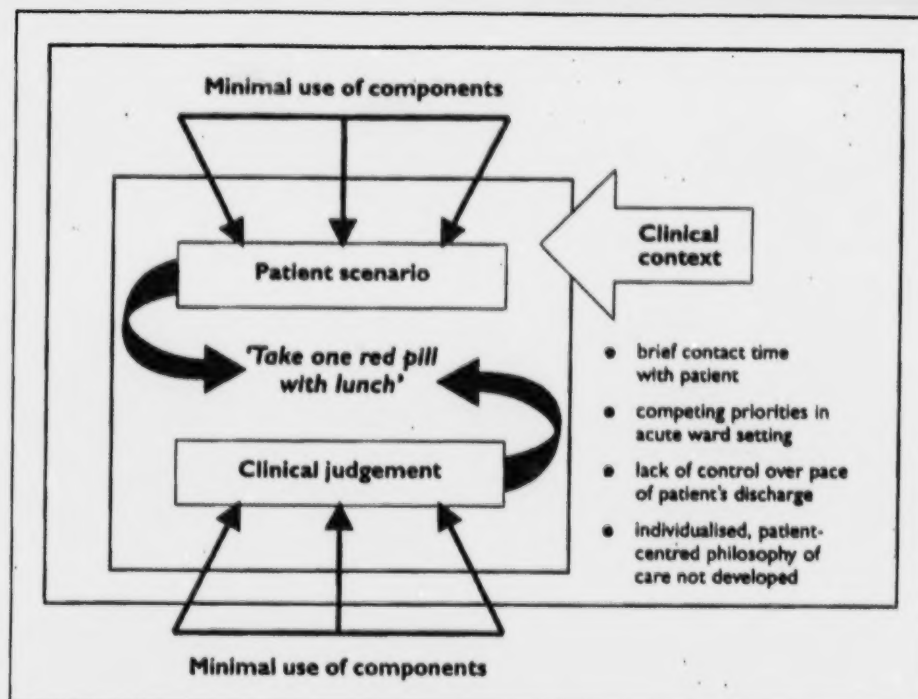


Figure 2.3: Contextual constraints on iAction

The conceptual framework allowed for the interpretation of actual episodes of practice and educational preparation. By using thematic categorisation, supported by post-observation interviews, identification of the practice reality frameworks of the clinical areas and the contextual factors enabling or disabling theoretically ideal practice was possible. Similarly, analysis of the educational institutions enabled the formation of the education reality frameworks. Whilst the former frameworks looked retrospectively from practice to the influences of educational episodes, in the latter frameworks the interpretative analysis was prospective and predictive of the practical outcome. By such constructions, the first step in answering the questions posed in Section 2.1 was taken.

Comparison of these frameworks not only contributed to answering the questions in Section 2.1, but also, to answering the question: *Has the concept of iAction as understood and identified by practitioners, undergone, as Morse et al. (1996a) would say, the same development, and would the concept be undelineated from that as understood and identified by those responsible for the educational preparation of practitioners?*

The demarcations implicit in this question belie the complexity of educators' contribution to practice and practitioners' contribution to continuing professional education. Yet the consensus of the concept of iAction for medication education provides the ongoing outcome measure of the educational episodes and the reference point that helps to construct an agenda for curriculum planning: what counts as the practice of iAction for medication education.

Central to the framework is the dramaturgically derived iAction, the outcome of analysis and synthesis of *patient scenarios* and *clinical judgements*. Whilst nurses' iActions were observed and interpreted, the project focused on the *a priori* issues of the contribution of the sub-components in such analysis and synthesis. Only following the identification of the sub-components and confirmation of their contribution can the processes of nurses' decision-making, their iActions, be explored further.

3.1 Critical appraisal of concept analysis in nursing research

A seminal paper in the field of concept analysis is that of Morse et al. (1996a). This critical appraisal of concept analysis in nursing research identifies a process that uses various techniques to explore concepts as described in the literature or as developed from interview and observational data. For Morse et al., concept analysis is the process of inquiry that establishes the developmental stage or maturity of a concept(s):

'... as revealed by their internal structure, use, representativeness, and/or relations to other concepts.' (Morse et al., 1996a: 255)

Understanding, exploring concepts by literature reviews and qualitative research methods identifies the level of maturity of the concept and the purpose for further concept-related activities such as: concept identification, development, delineation, comparison, clarification and correction; quantitative methods being used similarly for concept refinement/ measurement and validation (Morse et al., 1996a).

'Ideally concepts used in a discipline should be "mature". That is, they should be relatively stable, clearly defined, with well described characteristics, demarcated boundaries, specified preconditions and outcomes. Insofar as they have practical as well as purely cognitive meaning, they should also bear upon clinical phenomena. Bolton (1977) adds additional criteria: not only should a concept be related to present instances of a phenomenon, it should also be capable of being related to "fresh instances" – that is, to new situations, to new settings, and to new circumstances in which the phenomenon appears ... Concept analysis techniques may be used to evaluate the level of maturity or the level of development of selected nursing concepts in five ways:

- (a) to identify gaps in nursing knowledge;*
- (b) to determine the need to refine or clarify a concept when the concept appears sloppy or appears to have multiple meanings;*
- (c) to evaluate the adequacy of competing concepts in their relations to phenomena;*
- (d) to examine the congruence between the definition of the concept and the way it has been operationalised;*
- (e) to ascertain the fit between the definition of the concept and its clinical application.'* (Morse et al., 1996a: 256; reformatted)

Following Harre's (1993) epithet, *'Methodology followed where metaphysics led'*, the concept of iAction for medication education was explored:

- as described in the literature
- as developed from observational and interview data.

The overarching concept of iAction for medication education, as outlined in Chapter 2, was considered to be made up of the components *patient scenario* and professional knowledge-based *clinical judgements*. The *patient scenario* was constructed from the patient's psychosocial attributes, the point in their career in the health care system, and current medication therapy. *Clinical judgement* was constructed directly from the nurse's pharmacology knowledge,

assimilated patient education skills and communication style and, indirectly, knowledge of the pathophysiology of clinical conditions. The sub-components were identified and established from the literature review.

During the initial phase of the project, literature reviews were extended to explore the following subject areas to substantiate and/or refine these constructions:

- concordance and compliance, and associated literature from health psychology
- the application of patient education principles
- health education and promotion as applied to medication education
- pharmacology knowledge, the pre-requisites for nursing practice.

These reviews, and the pre-study-site focus group discussions, confirmed the contribution and relevance of the sub-components identified in the construction of the medication education conceptual framework. They also enabled more detailed illumination and identification of the contents of each sub-component, together with clarification of the nature of the evidence underpinning them (see Section 3.2).

Observational and interview data relating to the antecedents (*educational preparation*) and to behaviour options exercised in iActions (*clinical practice*) were collected using techniques derived from grounded theory, the ethogenic approach and ethnography. These methods, linked by their epistemological underpinnings of induction, and the subsequent analysis were used to

'... organise and consolidate textual and observational data into categories, to identify the characteristics along with the antecedents and consequences of the characteristics, and to compare data so that conceptual boundaries may be identified. Comparison of one category with another enables the identification of inclusion/exclusion criteria for each concept, and this process facilitates the identification of boundaries. Techniques of synthesis and abstraction enable the description of the concept in precise analytical terms. Synthesis and abstraction are essential to lift the analysis beyond mere description of an experience toward true conceptualization.'

(Morse et al., 1996a: 261)

The qualitative methods are described more fully in Section 3.12.

These concept-related activities (literature reviews; pre-study-site focus groups that tap into professional experience; observational and interview data) contributed to the theoretical sensitivity (Glaser, 1978) applied to the process of evaluating the maturity of concepts. Theoretical sensitivity was seen as the ability to recognise what was important in the data and to give it meaning; such capability was related to concept analysis as described by Morse et al. (1996a).

Thus these concept-related activities led to:

- establishment of the level of maturity of the component concepts related to the concept of iAction for medication education
- their degree of relatedness to iAction
- the structural nature of the relations between components and iAction.

The aims of pre-study-site focus group discussions with experts were to:

- inform the development of the conceptual analysis framework
- test the feasibility of using this method to generate views and recommendations from key informants on nurses' preparation and practice regarding medication education
- inform the development of the Phase 1 questionnaire (Section 3.16). Kreuger (1994) recommends the use of focus group data to inform large-scale, quantifiable investigations, such as questionnaire surveys.

Two pre-study-site focus groups were held at educational institutions used for pilot data collection only. Institutions were selected on the basis of the range of pre- and post-registration programmes offered, consistent with the focus of the project. Participants were selected according to current engagement in or experience of:

- teaching pharmacology
- teaching subjects relevant to preparing nurses for their role in medication education
- senior clinical positions or practice development posts.

A range of clinical specialisms was represented by participants with clinical backgrounds in adult, mental health and primary care:

Pre-study Group 1:

- head of department, pre-registration children's nurse education
- senior lecturer, pharmacology and biological sciences
- senior lecturer, adult nursing
- senior lecturer, children's nursing
- senior nurse, mental health practice development
- nurse practitioner and health authority advisor in primary care development.

Pre-study Group 2:

- principal lecturer, biological sciences
- lecturer, mental health nursing
- lecturer, mental health nursing
- lecturer/practitioner, transplant unit
- senior lecturer, learning disability nursing
- practice development and fund-holding manager, primary care
- nurse practitioner, primary care.

The discussions were co-facilitated by members of the research team; they lasted for approximately two hours and were conducted according to the principles outlined by Kreuger (1994). Transcripts of the discussions were independently content-analysed by three project team members, and derived categories were compared and discussed, leading to inter-rater consensus.

The literature review was conducted by manual searching of relevant journals, and by using a number of on-line databases:

- CINAHL (1982 to date)
- Psychlit
- Cochrane Library on CD-ROM
- Association for Nurse Prescribing database.

Team members also used networking to establish key contacts with individuals researching and teaching in fields related to medication education to confirm the relevance of the component concepts.

The conceptual dimensions of the *patient scenario* constructed from the literature and focus group data were corroborated as:

- patient attributes and context
- patient career
- medication therapy.

For each component a contents list was established from factors relating to patients' willingness and ability to take medicines as prescribed.

The conceptual dimensions of nurses' *clinical judgement* were corroborated as:

- communication style
- patient education skills
- pharmacology knowledge.

For each component a contents list was established from factors relating to the pre-requisite skills and knowledge which health care professionals might draw on in action for medication education.

Each sub-component of *patient scenario* and *clinical judgement* is described below, together with the nature and range of the evidence which can be drawn on to support delineation, thus establishing their degree of conceptual maturity.

3.2 Patient attributes and context

The dimensions of patients' attributes and context relating to their willingness and ability to take medicines as prescribed were identified from literature on concordance/compliance together with supporting data from key informants. The Royal Pharmaceutical Society (RPS, 1997) literature review and consultation with key informants concluded that studies focusing on the relation between the major demographic (age, sex and social class) and clinical (symptoms, diseases, classes of drugs and regimens) variables and the way in which medicines are taken showed weak correlations. However, important personal attributes in this respect appeared to be:

'... the physical and social vulnerability of the patient (for example, being old, belonging to an ethnic minority group, suffering from a psychotic illness).' (RPS, 1997: 23)

Older people were found to be more susceptible to non-compliance, with some studies indicating that up to 25-50% did not, or could not, take their medicines as prescribed (Shimp, 1985). Also, due to multiple pathology, the number of prescribed medicines increased with age (Royal College of Physicians, 1984; Murray, 1986). With increased numbers of medicines prescribed to an individual, Williamson (1980) noted that a larger number of adverse reactions were reported; these were considered to discourage compliance. The RPS (1997) cited Murray (1986) and also concluded that:

'Since cognitive and psychomotor competence are required in order to read and understand the labelling on medications and in order to be able to manipulate the containers, increasing age brings increasing problems with compliance.' (Murray, 1986: 24)

Focus group participants also considered that age was significant in relation to the 'rules' that older people construct about their medication regimens, and their dependence on following doctors' orders and subsequent inflexibility in changing dosages in the light of changes in their condition.

Both theoretical and behavioural science models of health behaviour and literature reviews on the subject of adherence highlighted the effect of individuals' social context on medicine-taking behaviour. This suggests that it is not merely the nature of the medication (e.g. complexity) which influences adherence, but the extent to which this fits into the patient's

CHAPTER 3 daily life. The *interaction* between individual, disease and treatment factors is significant. This relation was also highlighted by the RPS (1997). Whilst acknowledging methodological limitations in studies that attempted to evaluate successful adherence interventions, the RPS identified two broad categories of interventions that had been shown to enhance compliance:

- educational (information giving)
- behavioural (taking account of the patient's lifestyle and tailoring the medication regimen accordingly).

The RPS suggested that whilst variants of both have an effect, the behavioural approach was the preferred strategy.

'Patients need to know less about the pathophysiology of their disease and more about integrating new demands in to their daily routine ... [rather than to receive] ... standard presentations of medical facts and treatment rules, which all hypertensives or all diabetics or all asthmatics should know.' (Mazucca, 1982; cited in RPS, 1997: 31)

In her analysis of factors promoting patient compliance, Cameron (1996) also identified a number of reviews that highlighted the influence of social isolation and support. For example, Becker and Green (1975) concluded that family stability and support were strongly correlated with compliance. Cameron concluded that the rise in self-management of illness, particularly of chronic conditions, made the effect of family and other social support systems on compliance increasingly important.

Theoretical models of health behaviour and social cognition further highlighted the importance of social context. For example, studies based on the theories of reasoned action (Ajzen and Fishbein, 1980) and planned behaviour (Ajzen, 1985) have shown that the perceived views of significant others may influence adherence. Hogue (1979) noted that it should be a requirement to:

- identify patients' existing support systems
- discuss the medication regime with family members, with the patient's approval.

Thus, a number of dimensions of the sub-component of *patient attributes and context* were identified. The extensive data on the influential effect on adherence of some of these dimensions pointed to their degree of maturity. However, the extent to which the sub-component and/or its dimensions were operationalised in iAction for medication education; were mature across nursing contexts; and were influenced by contextual factors, was not revealed by the literature review.

3.3 Patient career

A number of dimensions of patient career were also considered to contribute to the construction of a *patient scenario* in the clinical context. The research team used their combined clinical experiences to arrive at a consensus regarding potentially salient dimensions of this contribution:

- patient diagnosis – necessary for understanding underlying pathophysiology, symptomology and pharmacokinetics and pharmacodynamics of medications
- prognosis – necessary for understanding adherence/non-adherence to the medication regimen, and the degree of non-adherence acceptable within therapeutic margins
- likely duration of the condition – related to the duration of the medication regimen and manifestation of symptoms
- previous medication experience – the extent of the patient's prior experience of administering medicines

- co-morbidity – the presence of other illnesses may influence patients' pharmacological experience of a particular medication and/or interfere with learning
- extent of nurse-patient contact time – relates to the length of patient admission to hospital or the frequency of clinic or home visits.

These dimensions of patient career are relatively immature in that there is little evidence of empirical or theoretical grounding in the literature. Nevertheless, their relevance is justified on the basis of the ideological consensus deriving from the team's clinical experiences.

3.4 Medication therapy

Literature on concordance/compliance identified a number of variables contributing to the dimensions of medication therapy. There was evidence to suggest that degree of adherence was linked to:

- frequency of dosage
- number of medications (polypharmacy)
- duration of the regimen.

With respect to the first two criteria, the RPS (1997) concluded that:

'The effect of frequency of dose has [also] been extensively studied. There is some evidence that compliance decreases when the frequency of dose increases. There is however, no convincing evidence of an important difference in compliance levels between once and twice daily dosing. One study (Pullar et al., 1988) concluded that "compliance with the once-daily regimen was best, but ... compliance with a twice-daily regimen was very similar and both were superior to dosing three times a day. Non-compliance also increases markedly as the number of different medicines to be taken increases".' (RPS, 1997: 23)

Additionally, Cameron (1996) concluded that duration of the regimen was important, citing Haynes et al.'s (1976) finding of a negative correlation between compliance and both frequency and duration of the regimen.

Thus, a number of medication-related factors appear to be linked to the capacity to comply, and their assessment should form part of nurses' construction of the *patient scenario*, which in turn contributes to the *iAction*. Again, however, the relative contribution of this sub-component and its relations to others described was not revealed in the literature review.

3.5 Communication style

In addition to the general principles above, recommendations about how interactions related to patient education should be characterised are common in the literature on patient education, health education and health promotion. Thus, evaluation of the maturity of the sub-component *communication style* follows.

The patient education interaction should be an individualised and empowering process, rather than focusing solely on compliance and other professionally-determined outcomes. This change of focus reflects the recent shift away from standardised, instructional approaches that characterised early work in the field. Wilson-Barnett (1988) noted the shift away from a didactic emphasis towards more patient-centred interactions. Redman (1993), reviewing the last 25 years, suggested that patient education, which met individual patients' satisfaction, was necessary rather than an appendage delivered when time and resources allow, and stated:

'The real goal is what fits best the unique experienced needs and aspirations of a particular person, working through shared decision-making.'

(Redman, 1993: 728)

Rankin and Stallings (1996) also suggested a re-focus from compliance to working in partnership to influence behaviour in ways acceptable to the patient. With specific reference to medication, the RPS (1997) also advocated an emphasis on concordance and co-operation, to reflect a philosophy of partnership and mutuality.

Further evidence was found in the reviews of Cameron (1996) and Marland (1999). Commenting on the factors affecting compliance, Cameron drew on a number of studies that highlighted the quality of the interaction as paramount. She concluded that there was a requirement to develop a therapeutic relationship with the patient and that communication skills training in pursuit of compliance was necessary to:

- operationalise the required interaction style
- provide supervision and reminders
- demonstrate the ability to understand and consider the patient's motives and demands.

In a more recent critical review on interventions to promote compliance with neuroleptic medications, Marland (1999) commented on health care professionals' gradual realisation that increased patient autonomy and involvement related to improved compliance. Active collaboration, negotiation around optimum dosages and seeking the patient's subjective assessment of their reaction to treatment were noted as vital components of the process.

Such recommendations are consistent with principles that emerge from a review of generic health education and health promotion theory, including:

- a need for two-way communication, respect and partnership (e.g., Tones and Tilford, 1994)
- shared decision-making and improved mutual understanding (e.g., Farrell and Gilbert, 1996).

The focus groups endorsed the contribution of communication style to medication education. Participants commented on the importance of:

- the ability to communicate information
- empowering the patient
- individualising the education to suit the patient and the context
- working in partnership
- using a facilitative approach.

There is a degree of consensus over the principles inherent in communication style. However, the dimensions of this sub-concept are derived from ethical or humanistic principles, rather than research-based evidence. Reviewing factors related to medicine-taking, the RPS (1997) suggested that one of the primary concerns was the failures of communication, which were largely due to a disparity between doctors' and patients' health beliefs, whilst noting the methodological weaknesses of studies in this area.

'Another problem in assessing the relationship between interventions and outcomes concerns the definitions of the interventions under examination. The content and nature of what are commonly termed 'counselling' interventions is under-documented in published research. The terms 'education', 'teaching', 'counselling', 'information' and 'instruction' are often used interchangeably and the extent to which the patient's own agenda and concerns are addressed is rarely detailed. As a result, it is difficult to assess the relative effectiveness of different designs of such interventions.' (RPS, 1997: 32)

The methodological difficulties and lack of empirical evidence linking communication style of education-related interactions with outcomes, have been commented on elsewhere (e.g., Blaxter, 1995; Olszewski and Jones, 1998). Additionally, the extent to which the dimensions of communication style contribute to an explanation of the phenomenon of medication education in clinical practice remains unexplored.

3.6 Patient education skills

An evaluation of the maturity of the dimensions of the patient education skills underpinning the *clinical judgement* component relied on both descriptive and prescriptive texts. These highlighted principles that can be used to construct a sub-component that hypothetically relates to the iAction.

Patient education was frequently highlighted as a step-wise and cyclical process. Redman (1997) and Rankin and Stallings (1996), who have conducted detailed reviews, agreed on the general principles. Skilled patient education includes:

- assessment of patients' health beliefs, theories and knowledge (Noble, 1991; RPS, 1997; Martens, 1998)
- assessment of patients' learning needs (Redman, 1997)
- assessment of patients' readiness to learn (Close, 1988; Redman, 1997; Martens 1998)
- setting of learning objectives based on mutually agreed goals (Edwards, 1995; Rankin and Stallings, 1996; Redman, 1997)
- deconstruction of information and/or practical skills into component parts with explanation and/or demonstration in stages, consistent with the patient's rate of learning (Davidhizar and McBride, 1985; Redman, 1997)
- avoidance of technical jargon in explanations and information giving (Darlison, 1998)
- advice that is relevant and realistic (Darlison, 1998)
- consideration of the sequence and timing of the education (Tilley et al., 1987; Edwards, 1995)
- making opportunities for clarification of information and/or practice with repetition of points and/or skill (Redman, 1997; Darlison, 1998; Hansen and Fisher, 1998)
- use of printed instructions to reinforce verbal information (Redman, 1997)
- making opportunities for evaluating learning (Rankin and Stallings, 1996; Redman, 1997)
- provision of feedback to the patient (Edwards, 1995; Darlison, 1998).

These principles were derived from educational theory and have been applied to the health care or patient context by authors such as Redman (1997). The extent to which they contribute to the specific practice of medication education or to effective outcomes as measured by effective and therapeutic medicine-taking, has not been evaluated nor described in the literature. However, the focus groups endorsed the importance of many of these principles. There was general consensus that patient education principles, in relation to medication, were important, that the educative process was step-wise and that nurses needed to draw on skills of:

- acknowledging patients' medication experience and knowledge
- assessing patients' existing understanding of their medicines
- providing medication advice and/or information in stages
- providing simple information in a language that patients can understand
- providing written information or medication charts to supplement verbal advice.

Comparatively greater attention within sociological and psychological research has been paid to the assessment of health beliefs, theories and knowledge, which has been described as an integral component of medication education (Noble, 1991; Cameron, 1996; RPS, 1997; Martens, 1998; Marland, 1999).

'The most salient and prevalent influences on medicine-taking are the beliefs that people hold about their medication and about medicines in general.'

(RPS, 1997: 7)

The clinical encounter provides the opportunity for the health care professional to enable the patient to disclose his or her health beliefs, and to convey their own health beliefs to the patient. On such a basis, making informed choices concerning medicine-taking is possible.

The significance of health beliefs in explaining and predicting medicine-taking behaviour derives from sociological research based primarily on qualitative studies, and psychological research characterised by the development of models (RPS, 1997). The Health Belief Model (Becker, 1974) outlined the contingent relations between beliefs about perceived costs and benefits of a health action, as well as between perceived vulnerability and beliefs about the consequences of action or non-action. The model's predictive ability with respect to health behaviours has also been evaluated (Sheeran and Abraham, 1996).

The Self-Regulatory Theory (Leventhal and Cameron, 1987) also highlighted the centrality of health beliefs in understanding health and illness behaviour, including medicine-taking. The theory portrayed a dynamic interaction between patients' experiences of, and beliefs about, their illness (illness representations) and their emotional reactions to their illness. Decisions about health behaviour such as medication compliance were viewed not as static and consistent, but as dynamic. Feedback was provided by two loops based upon the individual's appraisal of the effectiveness of cognitive and affective coping systems.

Empirical evidence in support of the importance of health beliefs in determining medicine-taking behaviour derives principally from Horne's studies (1997; 1998), from which two medication schemata emerged. The first concerned beliefs about the nature of medicines in general and the second the specifically prescribed medicine. Related to these schemata were four major beliefs about:

- the general over-prescription of medicines
- the general poisonous or addictive nature of medication
- the specific efficacy of a prescribed medication
- the specific harmful effects of a prescribed medication.

Horne and Weinman (1995) found these beliefs to account for a significant proportion of the variance in reported compliance amongst the groups studied. For example, concerns about the harmful effect of medicines in the 'specific' belief schema were significantly negatively correlated with compliance ($r = -0.35$ $p < 0.001$).

Thus, the influence of health beliefs in relation to medicine-taking is both theoretically and empirically supported by the literature. However, the extent to which their assessment and negotiation contribute to the concept of medication education in the clinical context is not well established.

3.7 Pharmacology knowledge

A further component of action for medication education is pharmacology knowledge. Dimensions of this can be identified from literature related to nurses' role in medication administration and education. The UKCC (1992), in its *Standards for the Administration of Medicines* confirmed that pharmacological knowledge was required for nurses to fulfil this

function. Nurses needed to use the opportunities provided by the administration of medicines for emphasising the importance and implications of the prescribed treatment and enhancing understanding of its effects and side-effects. The UKCC further stated that nurses involved in the administration of medicines should:

- have an understanding of substances used for therapeutic purposes
- be able to justify any actions taken
- be prepared to be accountable for the actions taken.

More specifically, White (1993; 1994) recommended that nurses needed to consider the following points in relation to their patients:

- why the drug has been prescribed
- the type of drug it is
- any special instructions
- the reasons for the dose and route of administration
- what effects it will have
- how long they will last
- any possible interactions with other drugs the patient is taking
- specific issues about the patient that may affect the action of the drug(s).

Although the literature is sparse, more recent reviews (Kelly, 1995; Courtenay and Butler, 1998) have begun to outline the pre-requisite pharmacology knowledge required for nurse prescribing. Nurses are considered to need a thorough knowledge and understanding of pharmacology, including pharmacodynamics and pharmacokinetics, to maintain patient safety, and to ensure that patients understand what they are taking, why, and the likely effects. In its *Nurse Prescribing Open Learning Pack* (ENB, 1998), the Board highlighted the importance of identifying contra-indications, potential side-effects and interactions with other items in the Nurse Prescribing Formulary before issuing a prescription. Additionally, it was suggested that the following advice be given to patients to increase their confidence in the items prescribed:

- what to expect
- how soon they will see an improvement
- how effective it should be
- any precautions that should be taken
- what to do if they have any concerns
- how to take or use the item
- how to store it
- what to do with any left-over item at the end of treatment.

Conveying such information presupposes that nurse prescribers will need a range of pharmacology knowledge.

The focus groups in this project also identified dimensions of pharmacology knowledge that were perceived to contribute to iAction. Some of the dimensions identified were similar to those in the literature:

- reasons for dosages of drugs
- effects or actions of medicines
- side-effects of medicines

Additional dimensions were cited as:

- knowledge of the risk-benefits of particular medicines
- skills in arithmetic to enable drug calculations.

Evidence-based literature on the dimensions of pharmacology knowledge required to undertake medication education is minimal, and generally, any dimensions identified have not been conceptually refined through qualitative studies. Such refinement would illuminate the contribution of this component to iAction in and across clinical contexts.

3.8 The construction of a conceptual framework

Literature reviews and pre-study-site focus group discussions enabled the identification of a number of related sub-components of *patients scenario* and *clinical judgement* leading to the concept of iAction for medication education and to the construction of a conceptual framework (Figure 3.1). These sub-components reach varying degrees of maturity, in terms of the supportive evidence currently available to predict medication education outcomes.

As the first stage of using concept analysis as a tool for education and practice development, numerical ratings were assigned to the sub-components, based on their empirical and theoretical maturity. The nature of the evidence/knowledge underpinning each sub-component can be summarised as:

- A. A relatively extensive empirical foundation and the sub-component is incorporated in explanatory theoretical models predictive of outcome allowing *concept clarification**
 - B. A partially developed empirical and theoretical foundation suggestive of outcome – requires *concept delineation/comparison**
 - C. Ethical, humanistic, ideological or theoretical principles – application to practice needed for *concept development**
 - D. Local key-informant and expert consensus (including clinicians, educationalists, researchers, patients and carers) where outcome is not systematically measured, concept characteristics are not clear and thus generalisability to other contexts is not guaranteed – requires *concept identification**
 - E. Published opinion papers that could lead to *concept identification**
- (*Morse et al., 1996a).

A simplified grading system, for the purposes of constructing an evaluative tool, the potential evidence base was developed as follows:

- evidence-based: Grade 1 assigned to sub-components underpinned by category A above
- transitional: Grade 2 assigned to sub-components underpinned by categories B/C
- intuition/experiential: Grade 3 assigned to sub-components underpinned by categories D/E.

As outlined in Chapter 1, the evidence-base grading is compared with *actual practice base* levels and *actual curriculum base* levels as found in each study site, to provide the focus for education and practice development. Whilst the sub-components (listed in Figure 3.1) are related, the maturity of the evidence on the extent of their individual and combined contribution to iAction remains low. Thus the unifying construction of iAction for medication education conforms to the indicators of an immature concept as outlined by Morse et al.:

'Multiple indices, borderline concepts exist, yet no concept accurately accounts for data describing a phenomenon ... while defined, the definitions may be inadequate. Descriptive information is missing

regarding the characteristics, antecedents and consequences ... The area of inquiry is undeveloped and numerous concepts exist to explain the phenomenon and provide competing explanations ... the concept ... is defined consistently, but the application to practice appears inappropriate or appears inaccurate. (Morse et al., 1996a: 270)

Thus, qualitative data collection methods were vindicated for the purposes of concept identification, development, delineation, comparison, and clarification. A more detailed account of these methods is given below.

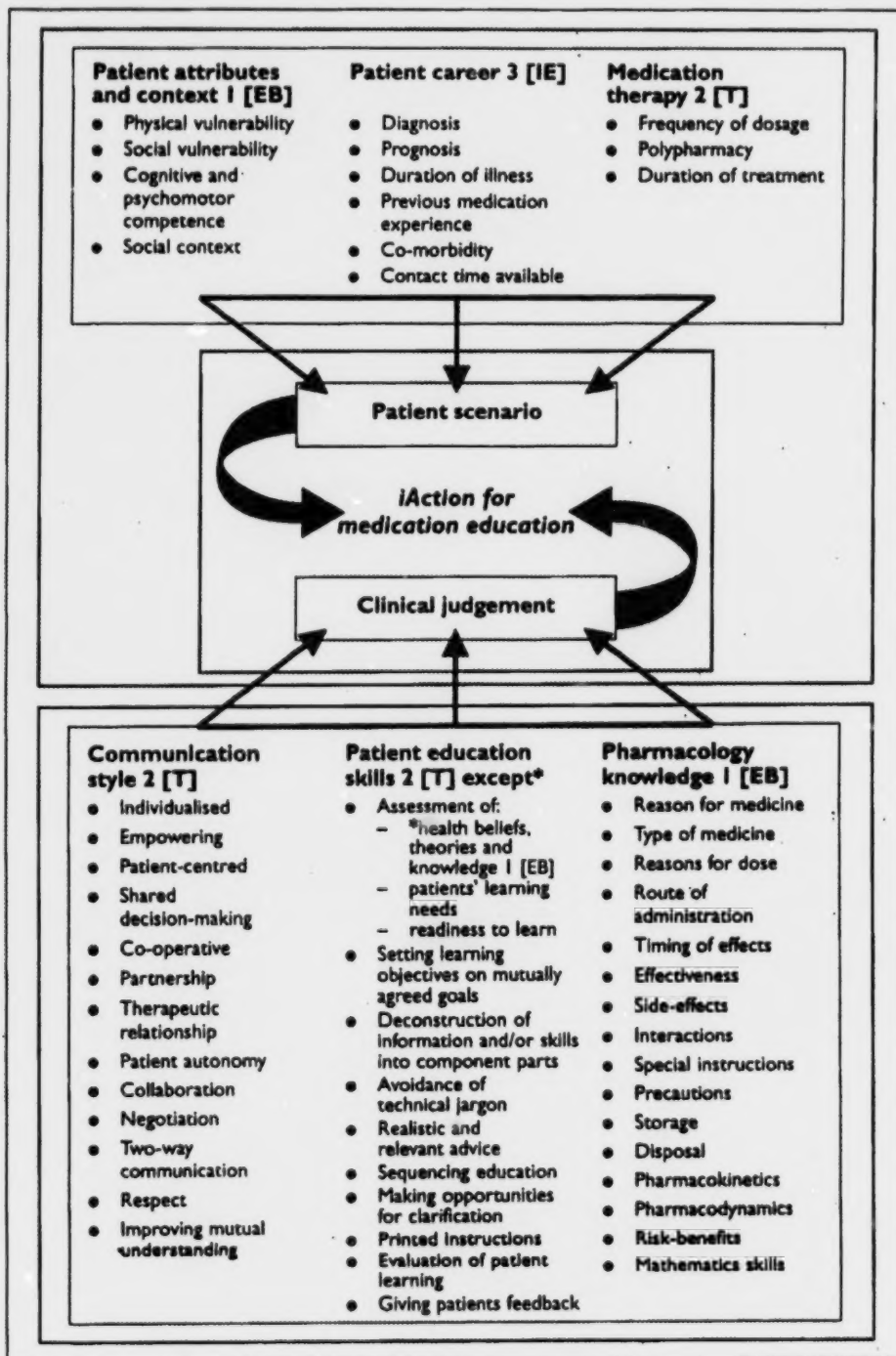


Figure 3.1: Conceptual framework and potential evidence base of sub-components from literature review

Yin (1994) suggested that case studies were the method of choice when the focus was on a contemporary phenomenon within its real life context, and when the investigator required little control over events. They are also characterised by in-depth examination of a phenomenon; the use of multiple methods of data collection; and the emergence of multiple perspectives. Here, it was important to capture the perspectives of different stakeholders in education and practice: students, lecturers, qualified nurses and other health care professionals involved in providing medication education, and the views of patients, clients and carers.

The unit of analysis serving as a case for the study was (a) an educational institution and (b) a clinical area within a trust used by the institution. The clinical focus of each case was limited to one or two specialist areas, so that in-depth data could be captured within the time available. The use of a multiple case design was also advantageous in that cross-case comparison could highlight the dimensional range of the concept as it appeared in different cases:

'... by using the case study method simultaneously in two or more settings, it is possible to compare and contrast the settings. The constant comparison of the (two) settings provides richness of the data and important insights for theory development.' (Field and Morse, 1985: 88)

Observational and interview data relating to the antecedents (*educational preparation*) and to behaviour options exercised in iActions (*clinical practice*) were collected using techniques as utilised in grounded theory, ethnography and the ethogenic approach. These methods, linked by their epistemological underpinnings of induction, and the subsequent analysis were used to:

- enhance conceptual clarity and maturity of the concept of iAction for medication education in clinical care contexts, through concept identification, development, delineation, comparison and clarification of the sub-components *patient attributes and context, patient career and medication therapy*
- investigate the antecedent component concepts of iAction (*communication style, patient education skills and pharmacology knowledge*) in educational curricula.

3.10 The study sites

At the study sites the focus was on nursing specialties. The educational institutions were 'purposively' selected on the basis of programmes offered in the following specialties:

- Study Site 1: pre- and post-registration programmes in adult nursing/care of the older person
- Study Site 2: undergraduate and diploma pre-registration programmes in mental health nursing
- Study Site 3: post-registration specialist pathways in general practice nursing and community nursing in the home.

Other inclusion criteria concerned: the institution's willingness to participate further in the study, as expressed in the national survey, and the location of the institution in different geographical regions throughout England.

Selection of clinical practice areas was made following discussion with trust and/or education personnel familiar with the aims of the project. Selection was informed by several criteria:

- to reflect the nursing specialty investigated at the educational institution
- to meet the expectation that there would be patient interactions with nurses about medication

- to maximise the opportunity for studying innovative, leading-edge models of service delivery
- to increase the likelihood of observing and interviewing patients representing the range of conditions prevalent in each nursing specialism.

3.11 Access to study sites and participants

Following an initial letter of introduction to the heads of the study sites, formal application for access to sites and participants was made to the research ethics committees at each site. Approval was granted in all cases.

An initial meeting with lecturers was held at each educational institution to introduce the project and seek consent for participation; lecturers not present at this meeting were approached individually about the possibility of observation or interview. Either a researcher or a lecturer informed student groups about the project. Group consent was sought prior to observing sessions. Volunteers for post-observation interview were also requested at this stage. All those approached consented to being included in the study.

In clinical areas, negotiation with senior nurse managers was followed by liaison with the unit or ward managers of the areas selected for data collection. Introductory meetings with groups of staff or individuals, depending on the setting, explained the project and sought permission to proceed. Staff not present at these meetings were approached individually during the course of data collection for consent. Information leaflets were also distributed. In the majority of cases, approval to proceed was granted. Within Study Site 1, access to one selected area did not proceed at the request of the hospital manager, due to staff commitment to an ongoing research project; an alternative area was selected. At Study Site 2, one community mental health team felt unable to participate due to workload; a second team were willing to take part. At Study Site 3, GPs at one practice felt unable to give permission for the practice nurse to be involved due to concerns about time commitments; an alternative practice was selected.

Patients were approached individually by either the nurse involved in their care or one of the research team. The project was verbally explained, and an information leaflet was given. Most of those requested to be observed and/or interviewed consented, although a small number of patients at Study Site 1, Clinical Area B declined. In addition, some patients at Study Site 2, Clinical Areas A and B had reservations about being audio-recorded and their wishes were respected.

3.12 Qualitative methods at the study sites

Morse et al. (1996a) suggested that qualitative methods were indicated for immature concepts which require identification, development, delineation, clarification and correction, whilst quantitative methods could be applied to mature concepts for validation, refinement and measurement. The knowledge-base requirements for these activities (Morse et al., 1996a) located iAction for medication education within the 'immature' concept category. Consequently, qualitative data collection methods were selected. Morse et al. (1996a) noted that data collection techniques could be used relatively independently of their original paradigms and separately from original purposes. When viewed as a series of techniques for sorting data, developing, delineating and refining categories, the utilisation of qualitative methods for the purpose of concept analysis became apparent. Thus, this project employed techniques as shown in Table 3.1, in both practice and education settings. Detailed application of the methods is given in Chapters 4, 5 and 6. Supplementary data, in the form of documentary analysis, were also used to inform the concept analysis.

Qualitative methodology	Derivative technique	Application for concept development
Ethnography	Interviews	Description of concepts from experience
Ethnography	Participant observation	Detailed description of behaviours
Grounded theory Ethnogenic approach	Interviews and focus groups	Identification of antecedents and consequences
Grounded theory	Constant comparison	Identification of conceptual boundaries

Table 3.1: Qualitative techniques that facilitate concept analysis and development (from Morse et al., 1996a) utilised in the project

Within each practice setting, audio-recordings and observations of nurse-patient interactions about medication were conducted. These were used to illuminate the dimensions of the components (*patient attributes and context, patient career, medication therapy, patient education skills, communication style and pharmacology knowledge*) nurses used to construct the higher-order concepts of *patient scenario* and *clinical judgement* and subsequently iAction. In each setting, interactions were selected for recording or observation with nurse collaboration. The aim in witnessing medication-related conversations was to maximise opportunities for providing detailed description of the phenomena in context (Madden, 1990). In some cases, these interactions were pre-planned; others occurred spontaneously as part of a broader episode of care. Interactions were audio-recorded wherever possible, with the researcher present in the majority of cases. A small number of recordings were made in the absence of the researchers at Study Site 1, Clinical Area B. Due to the spontaneity of some interactions, as well as ethical reasons (particularly at Study Site 2), audio-recordings were not possible and detailed notes were made concurrently and/or immediately following the observation.

The aim of the post-observation interviews with nurses and patients was to facilitate reflection in order to contextualise the performance in relation to the boundaries of iAction for medication education in and across each clinical area. Information about the context of the observation was also gained; for example, whether any previous information about medication had been given. Nurses were also asked more general questions about their educational preparation for, and practice of, this role in order to establish the relation between prior education and specific examples of practice.

An interview schedule was designed for this purpose, and interviews took place as soon as possible after the observed interaction. In most cases, this was immediately after the observation; in other instances, including those in which more than one interaction with the same patient was witnessed, interviews took place 24-48 hours after the initial interaction(s). Some patients were also interviewed about their preparation for medicine-taking in the absence of an observed interaction. Generally, nurses selected patients with whom there had previously been medication-related conversations in relation to nursing care.

Material was collected for documentary analysis where this contributed to the description and contextualisation of iAction. Examples of material included (Study Site/Clinical Area in parenthesis):

- nursing assessment tools (1B, 2B)
- ward information for patients (1A, 2A, 2B)
- clinical audit information (2A, 3A)
- prescribing policies in GP settings (3C).

During the initial phase of data collection at each education site, key informants, both nurse lecturers and practitioners, were identified and invited to participate in the focus group. Pharmacists were included at Study Sites 1 and 2 to provide a further disciplinary perspective.

Focus groups were conducted at each education site according to the principles recommended by Kreuger (1994) and Morgan (1993). For example, in the planning phase, questions and issues to be studied were identified and incorporated into a discussion guide. During the group discussion, care was taken to ensure that participants were given sufficient context and background to focus on the issues; open questions were used, and sequencing was flexible to allow the discussion to flow. Each group discussion was co-facilitated by two members of the research team, and was approximately two hours' duration. Discussions were audio-taped and transcribed verbatim. The research team members who facilitated the discussion undertook analysis.

In some instances, lecturers and/or practitioners who were unable to attend the focus group participated in a one-to-one interview with a member of the research team, using a similar schedule of questions. These interviews were audio-recorded where appropriate, and were of 15-30 minutes' duration. The focus groups and interviews were used to corroborate observational data.

Classroom-based non-participant observation of teaching enabled the dimensions of topics included in the curriculum and their intended contribution to be illuminated and analysed, contributing to the delineation of the component parts of *clinical judgement*. Key sessions focusing on pharmacology and/or patient education were identified through curriculum analysis and discussions with lecturers. The time frame for data collection at each site also influenced which teaching sessions were observed.

One or both team members responsible for data collection at the site subsequently observed the session. Detailed descriptive notes were made concurrently about:

- format of the session
- content covered (including application to practice and any reference to patient education about medication)
- method of delivery (including student participation)
- location of each session in relation to the broader taught curriculum and clinical placement experiences of the students.

Analytical field notes (Morse and Field, 1996) were constructed following each session.

Observation of teaching sessions was complemented by reflective discussion with a sample of the students. These discussions focused on students' perceptions of the teaching, the application of theory to practice and its relevance in preparing them for providing education to patients about medication. Student discussions took place immediately after an observed teaching session or series of sessions and generally lasted 10-15 minutes.

Curriculum documentation pertaining to the selected programmes and modules was used to identify sessions for observation and to locate them within the curriculum. The following documents were analysed to identify values or principles underpinning programmes, learning outcomes and assessments pertinent to the project:

- programme overviews
- module handbooks
- practice assessment materials.

Support groups for carers of individuals whose needs were relevant to the focus of data collection at each site were identified either by contacting the community health council

or via networking with lecturers and clinicians. Following consent, focus group discussions with carers were conducted within their naturally occurring meetings, with members of the research team acting as co-facilitators. A guide was used to focus discussions, which lasted approximately one hour. Each group was audio-taped and transcribed verbatim. These findings are reported in Chapters 4, 5 and 6.

At the carer focus groups, the aim was to elicit carers' experiences and perspectives of medication advice and support in relation to the person for whom they cared. Carers' experiences of administering their own medication also emerged during the discussions, adding a further dimension to the process of conceptualising medication education.

3.13 Ethical framework

All stages of the data collection, analysis and report writing were conducted within the ethical framework outlined in the guidelines of the Royal College of Nursing (1998).

The issue of individual informed consent was considered throughout the data collection process. Members of the research team offered verbal explanation of the project to potential participants; in some cases, explanation was given to students by lecturers and to patients by nurses. Information leaflets were also given to patients in practice settings. Participants were given time to consider their decision to participate, and patients were asked to confirm their consent in writing. Informed consent was regarded as a dynamic rather than a static process (Usher and Arthur, 1998), in that patients' approval and receptivity was continuously monitored during data collection. This proved particularly significant in observation and interviews with clients with mental health problems, fluctuations in their lucidity compromising initial agreement to participate.

Codes were allocated to individuals and settings to ensure anonymity. Material was stored in locked cabinets at the project team's place of work to maintain confidentiality. Material stored on computer was subject to Data Protection Act agreements.

3.14 Analysis of descriptive and evaluative data

The process of analysing descriptive and evaluative data followed a similar pattern for all the sources and settings outlined above:

- audio-recorded data were transcribed verbatim
- transcripts and/or notes from each setting were subjected to a systematic process of thematic content analysis (Burnard, 1991).

It is important to reiterate that analysis was underpinned by pre-determined data collection techniques designed to improve credibility (Robson, 1993):

- triangulation of data (Denzin, 1978) was undertaken relating to:
 - methodological triangulation: multiple methods were used to illuminate nurses' preparation and practice at each site
 - data triangulation: the use of multiple sources of data incorporating the perspectives of students, lecturers, qualified nurses, other health care professionals and patients/clients and carers
 - investigator triangulation: two members of the research team were engaged in data collection in each setting. They also shared the process of analysing these data.
- prolonged involvement in each setting by two research team members
- persistent observation occurred in all of the settings until research team members considered that no new issues were emerging

- peer debriefing followed each period of data collection, and experiences were also shared at regular intervals with members of the team not directly involved in data collection at a particular site
- member checks were also utilised: where possible, findings from data analysis were presented to nurse participants for verification and clarification
- researcher biases were identified through reflexivity in analytic field notes in relation to their own role in, and perceptions about, the data collection process and through consultation with other researchers (Boulton and Hammersley, 1996); this enhanced neutrality or confirmability: freedom from distortion in data collection and analysis procedures
- researchers' decision trail was identified with respect to sampling procedures and data sources in the construction of the theoretical framework (Holloway and Wheeler, 1996); auditability leads to the possibility of consistency being established by readers conducting external checks on the researchers' decision trail (Holloway and Wheeler, 1996) and additionally to neutrality by the linking of findings to their data sources. Both these processes establish the replicability of the study (Lincoln and Guba, 1985).

3.15 Qualitative analytic techniques that facilitate concept analysis and development

Morse et al. (1996a) established a relation between qualitative analytic techniques that facilitate concept analysis and development. The practical steps of data collection and analysis were underpinned by a philosophical stance derived from principles of interpretative qualitative research and by those that led Morse et al. (1996b) to the anatomy of a concept for nursing research. Morse et al. (1996b) considered the assessment of the structural features of concepts to be the basis of concept evaluation. Such features of definition, characteristics, boundaries, preconditions and outcomes could also describe the process of categorisation in systematic, thematic content analysis. Thus, adherence to and acknowledgement of:

- the principle that qualitative research should be versatile and sensitive to meaning and context (Sandelowski, 1993)
- the principle that reality is subject-orientated rather than researcher-defined (Holloway and Wheeler, 1996)
- the criterion of consistency which focuses on replicability (Holloway and Wheeler, 1996)

relate to two principles of concept analysis as developed in epistemological, logical and linguistic philosophy and summarised by Morse et al. (1996a):

- epistemological – the concept is clearly defined and well-differentiated
- logical – the concept is systematically and coherently related to other concepts.

Adherence to:

- the principle of applicability: the criterion used to inform decisions concerning the transferability of findings to other contexts or groups (Lincoln and Guba, 1985; Holloway and Wheeler, 1996)
- the principle that coherent theory generated from in-depth data is theoretically generalisable to other contexts (Sharp, 1998)

relates to the other two principles summarised by Morse et al. (1996a): pragmatic – the concept is capable of operationalisation; and linguistic – the concept is appropriate to its use in context.

The parallel tracks of qualitative research and concept analysis employed in this project are considered to provide the framework to evaluate the construct of iAction and its role as a prerequisite for curriculum design related to medication education.

For each study site, the presentation of findings from the clinical and education settings concludes with a reconstruction of the conceptual framework as derived from the observations of clinical and educational practice.

As was described in Section 3.8 and recorded in Table 3.1, each sub-component was assigned a *potential evidence base* grading, related to the maturity of the evidence base as derived from the literature reviews. In this sense, they provided a measure of the state-of-the-art of each sub-component. Thus, both clinical and educational practice could be considered as *maximal* by utilising all the state-of-the-art evidence to inform iActions or to deliver a curriculum. By the same argument, practice that utilises little or none of the available evidence could be considered as *minimal*. Such considerations as maximal or minimal are independent of the level of the *potential evidence base*; they only relate to the extent of the evidence used, whatever its level of maturity. Such 'relativity' provided a measure of the practice observed. Each sub-component was assigned an *actual practice base* or *actual curriculum base* level on a scale of 1-3, where 1 represents 'maximal practice' and 3 'minimal practice.' Level 2 indicates that the practice is utilising partially the evidence available. In practice settings, decisions about levels were made on the basis of both the range of activities related to a sub-component observed and the frequency of their use. This led to a composite level score for each sub-component as seen in practice.

Similarly, *actual curriculum base* levels were ascribed according to the extent to which the sub-component contents were a feature of education preparation at the educational institution. Levels were allocated by members of the team responsible for data collection at that study site.

The team recognises that such judgements could involve greater or lesser degrees of sophistication. Here, the use of concept analysis is presented as a flexible process that may be adapted to suit different concepts, as well as clinical and educational contexts. This may involve cruder or more refined levels, depending on purpose and circumstance. The intention is to demonstrate how broad evaluative criteria or levels can provide a focus for education or practice development when juxtaposed with the *potential evidence base* of sub-components underpinning a concept of interest.

3.16 National survey

In addition to these interpretative and inductive techniques, a national survey was used to provide an overview of learning outcomes, assessment strategies and other curriculum design and delivery factors related to pharmacological knowledge and communication and patient education skills within pre- and post-registration programmes.

The decision to use a survey related to methodological and conceptual issues of applicability (concerning the transferability of findings to other contexts or groups) and how coherent theory generated from in-depth data is theoretically generalisable to other contexts. In this respect the questionnaire design was based on issues identified in pre-study-site focus groups and the literature review.

Questionnaires were designed for both pre-registration and post-registration programmes where education about medication was considered to be particularly pertinent. These were:

- adult and mental health nursing programmes (pre-registration)
- adult, care of the older person, mental health, community nursing in the home and general practice nursing (post-registration specialist) programmes.

The questionnaire was developed in two sections, the first to be completed by a person with an overview of pre- or post-registration programmes in relation to the integration of subject areas and assessments, and the second by an individual/individuals teaching pharmacology who would have insight into such aspects of the teaching as methods of delivery and learning outcomes.

Table 3.2 shows the distribution and response rates for educational institutions and individuals associated with pre- and post-registration programmes with respect to the targeted respondents identified above, and represents an overview of the response rates. However, not all institutions offered the targeted programmes and in these cases there is an underestimation of the response rate.

Responses	Section 1	Section 2
Pre-registration programmes		
Individual	51	49
Institution (n = 47)	35 (74%)	30 (64%)
Post-registration programmes		
Individual	26	21
Institution (n = 35)	23 (66%)	13 (37%)

Table 3.2: Response rates for the questionnaire

Chapters 4, 5 and 6 present findings from the national survey where they relate to the conceptual themes that emerged from the observational and interview data collected at Study Sites 1, 2 and 3.

A full analysis of all questionnaire items and responses in both pre- and post-registration questionnaires was undertaken, in order to provide a national overview, as specified in the project aims. However, it was considered that any significant findings from this analysis would be best understood juxtaposed with the in-depth evaluative data collected at the study sites. This would enhance interpretation of the descriptive survey data and illustrate the potential applicability or transferability of the findings to the broader population of educational institutions and/or clinical practice areas. These findings are reported in national survey data (NSD) boxes which present:

- specific questions as listed in section 1 and section 2 questionnaires
- tables of responses to specific questions in Sections 1 and 2 of the questionnaires (percentages are rounded upwards)
- Likert statements as listed in the questionnaires
- tables of attitudinal responses to Likert statements in the questionnaires
- additional notes, for example, statistical information and related free-text.

Presented in this format, the survey findings identify where critical issues emerging from the study sites have resonance within other educational institutions and clinical areas throughout England. They also highlight national trends that deviate from the specific findings. This allows judgement of the representativeness of the study sites *vis-à-vis* those institutions completing the questionnaires.

4.1 Introduction

This chapter shows how the parallel tracks of qualitative research and concept analysis were applied to the clinical areas and educational institution of Study Site 1 to evaluate the construct of iAction for medication education. At this site the focus was on programmes related to adult and care of the older person nursing.

The central aim of data collection was to identify nurses' roles and contribution to patient education about medication within the context of Clinical Areas A and B. Clinical Area A was an acute medical ward (Ward A) and Clinical Area B was a rehabilitation and respite community hospital (Hospital B). Data collection was conducted during March and April 1998 in Ward A and April and June 1998 in Hospital B. Each of the two researcher's presence on the ward was negotiated with relevant staff and opportunities were taken to maximise the likelihood of capturing data about medication education by:

- being present during a variety of shift times and different days of the week
- accompanying nurses on a drug round
- being present during patient admission and discharge times
- asking nurses to alert them at other times to interactions focusing on medication
- informal observation and discussion.

Data collection on the wards (Table 4.1) was considered to be complete when both researchers considered that data capture was saturated.

In Hospital B two patients formed the focus of more than one audio-recorded nurse-patient interaction, reflecting the ongoing nature of patient education. In some cases, interactions were witnessed but not recorded. Self-medicating patients were interviewed in the absence of observed interactions. Two patients consented to be interviewed at home several weeks after discharge to provide a different perspective on patients' evaluation of the information about medication they received in hospital. One patient was interviewed with little change in her perceptions about medication education; unfortunately, the other patient died shortly after discharge. Following up patients at home was found to be too resource-intensive to add to the original design of the study and was therefore not pursued further.

Nurse interviews at Hospital B were confined to four nurses and a lecturer-practitioner, who were consistently engaged in medication education, including the facilitation of self-medication.

An offer to feed back the results of a preliminary analysis of data received no response on Ward A. Six weeks after withdrawal from Hospital B, a feedback session on preliminary findings was given to the nurses. The ward manager, lecturer-practitioner and all permanent nurses on the ward were present, enabling the validation of emerging conclusions. Data from this session were incorporated into the process of concept analysis (Section 4.7). A summary of activities is given in Table 4.1.

Activity	Ward A	Hospital B
Informal observation and field notes	33 hours	50 hours
Audio-recorded nurse-patient interactions	5	8
Non-audio recorded nurse-patient interactions	0	8
Audio-recorded researcher-patient interviews	6 (5 post-interaction)	12
Audio-recorded researcher-nurse interviews	9 (5 post-interaction)	5
Collection of written documentation related to medication education	yes	yes

Table 4.1: Study Site 1 Clinical Areas A and B: data collection summary

4.2 Ward A

Ward A was a 23-bedded acute medical ward within a large teaching hospital, one of three hospitals within the acute trust used for student placements at Study Site 1. Patients were referred via accident and emergency (A&E) or via the admissions ward following referral by a general practitioner (GP). During the period of data collection, reasons for admission covered a variety of typical medical conditions such as chest infection, diabetes-related problems, cerebrovascular accident (CVA) and heart conditions. Patients' ages ranged from 40 to, predominantly, over 65 years of age. The ward sister reported that the average length of stay was approximately five days. Patients were discharged to a variety of destinations, depending on their degree of dependency and the care required. This included independent living in own homes, and to nursing home care.

The ward was headed by a G-grade sister and staffed by three F-, five E- and nine D-grade nurses and four A-grade health care assistants (HCA). Newly-qualified D-grade nurses are recruited to the ward from Study Site 1 and a variety of other universities. During the period of data collection there were 3.6 E-grade and one A-grade posts vacant. Consequently, nurses from a local nursing agency regularly filled two E-grade posts. Furthermore, the staffing complement of the hospital's medical wards was being changed from three to two F-grades and this had impacted on the primary/team nursing in operation – the number of teams had been reduced from three to two. The ward sister commented:

'We are still trying to maintain the principles of primary nursing within a team setting, and because I think of the lack of sort of senior and E-grade cover, it's been harder, because a lot of the D grades are fairly new and they're reluctant to take on primary patients. So that's the principle that we've been working to, but it's been quite difficult.' (N1A1)

The ward sister also stated that over the past six months support workers on the ward had increased from one to five whole time equivalents (WTE). The minimum staffing level was quoted as, for an early shift, four to five D-grade (or above) nurses with two HCAs, and on a late shift three D-grade or above with one HCA.

Second-, third- and fourth-year undergraduate students from Study Site 1 were allocated to the ward for clinical placement experience, and were allocated a mentor for this period. During data collection one fourth-year student was on a second-term placement on Ward A; other students were absent from the ward due to a study and holiday period.

Patients also received input from a physiotherapist, occupational therapist, dietitian, social worker and pharmacist allocated to the ward. Medical consultant ward rounds took place twice weekly.

Hospital B forms part of a community trust's hospital service provision and was a 30-bedded unit known as a community hospital. The unit was located within a larger acute hospital dealing with oncology, gynaecology, renal and radiology specialties.

Patients were referred to the unit for rehabilitation and respite care. Referrals came from both an acute hospital in the area, following an admission, or via patients' GPs. During the period of data collection, patients were on the unit for rehabilitation following acute admission for fractures and joint problems, myocardial infarction and CVA; others had been admitted from home for medication-related complications. The minimum period of admission was 1-2 weeks, with some patients requiring several more weeks on the unit. The average age of patients was over 70 years. Patients were discharged to a variety of situations, including independent living in their own homes, living in their own homes with lay and/or professional support, and nursing homes for the more physically dependent.

A manager, who heads Hospital B, mainly dealt with administration at both unit- and community trust-level. An H-grade lecturer-practitioner, based on the unit, had a practice development remit, as well as teaching responsibilities, focusing on the care of the older person, at Study Site 1 educational institution. Permanent day-duty nurses consisted of five RNs and one EN (E- and F-grades) assisted by two B-grade HCAs and nursing bank staff, some of whom work regularly on the unit. The nurses worked in two permanent teams, each of which operate on either side of the unit, and were led by an F-grade nurse. At the time of data collection the unit was experiencing recruitment and retention difficulties, and was reported to be five WTEs short of established staffing levels. This necessitated a supply of one or two bank nurses per shift.

Attached to Hospital B were physiotherapists and occupational therapists, as well as a 'linked' pharmacist from the main hospital. The research team was informed that a key worker (nurse, physiotherapist, or occupational therapist) was assigned to each patient, the selection being dependent on the patient's main rehabilitative needs. Medical input was received from patients' GPs, who visit the unit occasionally to monitor progress.

Pre-registration BA nursing students from Education Study Site 1 were allocated to the unit for clinical practice for a term in their second undergraduate year. Students were assigned to a mentor for the period of their placement, and also had contact with the lecturer-practitioner on the unit. During the period of data collection, two students were in the first few weeks of their placement.

At the time of data collection, a policy of patient-centred medication had been used by one nursing team for 12 months and the other team for three months. This system involved a move away from the traditional 'drug round', performed by one nurse at regular intervals for all patients, to individual nurses administering their named patients' medication at suitable times, and as part of their total care provision. Implicit in patient-centred medication was recognition that patients had different requirements in relation to medicine-taking. For example, some patients took responsibility for taking their own prescribed tablets that were kept in a locked cupboard adjacent to the bed. The antecedents and consequences of patient-centred medication are discussed more fully below.

The primary purpose of the data collection was:

'... to organise and consolidate textual and observational data into categories, to identify the characteristics along with the antecedents and consequences of the characteristics, and to compare data so that conceptual boundaries may be identified.' (Morse et al., 1996a: 261)

Such synthesis and abstraction facilitated conceptualisation. The 'typicality' of the iAction in Clinical Areas A and B was derived from data, saturated during observation. It is those 'typical' activities of nurses that informed the concept identification.

4.4 iAction in Ward A

Table 4.2 lists the categorisation of iAction in both clinical areas. Also, the influence of the clinical context on the dimensions of these iActions was thematically analysed. The iAction of each area is discussed below independently before comparison is made between the areas in relation to the components and their contribution to *patient scenario* and *clinical judgement* within the framework.

Ward A	Hospital B
● Informing patients about in-patient changes in medication regimens ● Giving instructions and checking understanding at the point of discharge	● Facilitation of self-medication (SM) – Assessment of suitability for SM – Assessment of patient's knowledge of medicines – Provision of information about medication – Provision of aids to medicine taking
● Liaison with professionals and other carers in the community to assist the patient in medicine taking	● Liaison with patient carers

Table 4.2: iAction in Clinical Areas A and B

4.4.1 Informing patients about inpatient changes in medication regimens

Patients would often experience changes to their medication regimens as a consequence of admission to hospital. These changes took a number of forms:

- patients' existing pre-admission medications changed colour and shape because the hospital pharmacy prescribed generic as opposed to proprietary medicines
- patients' presenting conditions, or those acquired in hospital, necessitated a new prescription
- patients who were experiencing a medication-related problem also required a change in prescription.

Patients' identification of their medicine was based on different criteria to that of health care professionals. In the first two scenarios above, even when the opportunity was presented during medication administration to extend the patient's knowledge, or to supplement information following ward rounds, nurses restricted their information giving to the name, purpose, colour and shape/size of tablets. One D-grade staff nurse said:

'Patients do tend to go by the colours more, as well as the name. They know shapes and they know colours. Quite often we get patients coming in and they say, "I haven't got my orange tablets", and you haven't a clue what it is, because they haven't got the name, but they know it's orange ...' (N2A1)

One interviewee had been admitted due to side-effects (a rash and toxicity) of an anti-hypertensive and consequently was being monitored on a new medication regimen. In this instance, the patient, who had been admitted for eight days at the time of interview, knew very little about his new medicine. The researcher asked the patient what he thought were the important things that patients should be told about medication. He responded:

'Well, apart from telling them what they're trying to do with them, or what they're hoping the medication will do, I mean there's not much else they can tell you, unless they know that there's any side-effects that they could. At the moment my blood pressure is getting a bit low because of this new drug, so they tell me if I get any giddy effects or anything like that, I've got to let them know straight away ... They're very good.' (PIA1)

Here, although the patient had indirectly assimilated the purpose (to reduce blood pressure) and potential side-effects (giddiness) of the medication, he had not been given its name.

4.4.2 Giving instructions and checking understanding at the point of discharge

This was the most frequently observed role that nurses were seen to perform in relation to medication education. A number of interactions were observed and/or recorded whilst nurses were engaged in giving patients instructions about their medication 'to take out' (TTO) shortly before discharge; again this largely comprised information about the name and purpose of each medicine, its dosage and at what time of the day it should be taken. Patients were also usually informed about the length of the course and to return to the GP for a further prescription if necessary.

Nurse: 'What you've got in here is seven days' supply, and um, you've got a letter for your GP and when you run out, or when you need to get another prescription from him, and the other one which you wouldn't have been on recently is the amoxicillin which is the antibiotic ... So these are the capsules, you'll probably recognise those, there are only two days' left to take, two days' worth, so they'll run out and you won't need to get any more of those. So it says take one capsule three times a day. Are you happy about the times for that? ... So they'll be gone before you know it. And this is the lisinopril for your blood pressure, there it is, the pink tablet, and this is the one, I took, we took your blood pressure for, and it seems to be working to keep your blood pressure down and so they would like you to continue taking it, just to help that. And you've got seven days' worth there and that's in the morning, so you can have it with your aspirin.' (N3A1)

Nurses were clear about their aim in an interaction of this kind. Their role was to ascertain that the patient was clear about the basic parameters of their medication regimen. For example, following her interaction with a patient about to be discharged home, one E-grade staff nurse said that her intention was:

'... just to make sure that he understood what he was taking and that he wasn't taking eight unknown pills in the morning. To make sure how many he had to take, what he had to take, you know, what they were for, just to make sure he was happy with that.' (N4A1)

To augment this role, nurses were frequently seen to use what was referred to as a 'self-medication' chart. This was an A4 proforma on which the nurse listed the name of each tablet, its purpose, dose and time of administration. When completed, this had to be checked by a pharmacist against TTOs before nurses went through it with the patient. Nurses perceived this to be particularly useful as a written reminder which patients could refer to during discussion and following discharge. It was thought that this helped to compensate for some patients' incomplete assimilation of verbal information given at the time of discharge due to anxiety about discharge, memory problems or the nature of their condition interfering with learning whilst still in hospital. However, one nurse commented that its potential could not be evaluated because the nurses did not know how it was used once patients were discharged home.

Here, nurses were individualising their advice in relation to patients' attributes. Yet, the way in which the proforma, when in use, constructs an explicit agenda for iAction, may have imposed a limit on the range of behaviour options considered. Such a limited range of behaviour options for other interactions may also have been set, albeit implicitly, by the same agenda even when the proforma was not in use.

4.4.3 Liaison with professionals and other carers in the community to assist the patient in medicine-taking

A further dimension of nurses' medication role concerned liaison with others who would be assisting a patient with medicine-taking on discharge. In some instances, this was a community nurse and/or carer. Nurses were also observed to liaise by telephone with nurses in a residential home. Letters to GPs concerning details of the patient's admission and discharge medication were also sent. Clearly, the extent to which this occurred depended on an individualised assessment of each patient's social circumstances, including the nature of the environment to which they were being discharged, professional and/or lay support available and the patient's degree of responsibility for medicine-taking. In the cases observed, the range included:

- a patient discharged to a residential home who was to have her medicines administered by nurses
- a diabetic patient on warfarin who was to be supported at home by both his niece and regular visits by a community nurse
- a patient who was to be responsible for her own insulin injections, but who would have an initial assessment visit from a community nurse to ensure that the patient's administration was safe and accurate.

A D-grade nurse interviewed following an interaction was asked about the knowledge and skills required for medication education:

'Well, you need to know your patient. You need to know their, you need to know what their set up is when they go home, what sort of environment they're in. You need to know who's going to, who, if they've got any support at home, or if they're by themselves ...' (N5A1)

This individualised assessment, followed by liaison with carers, is clearly a further way in which nurses construct a patient scenario with an emphasis on the patient attributes and context. Here, the iAction as a contribution to ensuring effective medication-taking, did not directly involve educating patients about medication.

4.4.4 Nurses' iActions in the clinical context of Ward A

Nurses' iActions, as identified by the nurses themselves and the research team, were mediated by:

- the acute nature of the patient's condition
- patients' apparent preference for a low level of detail about their medicines
- the time available to engage in patient education
- nurses' role and relationship with other members of the ward team.

This was an acute medical ward, where the likelihood was high that patients' acute illness interfered with their capacity to learn about their medication. The ward manager perceived this to be influential:

'I think the nature of the patients, it's quite difficult as so many of them are not really equipped to take on board the information at the moment because of their acuteness, so I think that's a difficulty, a lot of the patients have had strokes or you know ...' (N1A1)

This was also evident from some of the interactions witnessed. Even at the point of discharge, the acuity of the illness appeared to influence the nature of the iAction. For example, during an interaction with a diabetic patient, who was being discharged following a chest infection, the patient appeared confused about his medication and generally rather disorientated. He was interviewed by one of the researchers after the nurse had talked through basic details about names, purposes and dosages of his TTOs. He did not appear to have a clear idea about what the nurse had said about his tablets. Any more information would have *'gone over his head'*. Another nurse commented that one of the difficulties with medication education on the ward was: *'Having the patients that are able to know, you know, to take the information in'* (N5A1).

The general perception, held by both patients and nurses, was that a low level of detail was required about their tablets. A number of nurses informally suggested that patients knew their medications by colours and shapes, and did not want a great deal more information. Patients interviewed after observed interactions also appeared to be satisfied with the relatively superficial information about name, purpose and dose of their medication, and it was difficult to elicit comment on areas in which they would have preferred more information.

Follow-up interviews after a period of managing medications outside the hospital environment may have revealed different patient information needs, suggesting that the timing of patient interviews was critical. To generalise that patients prefer a lack of detailed information about their medication should not be the only conclusion, given the range of nurse behaviour options within a theoretical iAction. Assessments that are individualised and diachronic allow for an ongoing reformulation of the patient scenario. Here, liaison between practitioners could contribute to the possibility of raising patients' readiness-to-assimilate new information within a framework that is informed by patient education skills.

A further factor, related to the acuity of the nursing work, was the busy ward environment and the lack of time available for patient education. The ward manager summarised the views of some nurses:

'Our problems are ... we're always excessively busy and you're often grappling with real basics rather than anything more and that's because of the nature of nursing.' (N1A1)

Insights were gained about the nurses' role in medication education in relation to others in the ward team: specifically the medical staff and pharmacists. Doctors had responsibility for prescribing medication to patients whilst on the ward, and for TTOs. Nurses were responsible for administration and explanation of medicines given both during a patient's period on the ward and for discharge. As noted above, change in a patient's prescription initiated by a doctor, was sometimes the catalyst for nurses to provide information or explanation about medication. During the period of data collection, doctors were not observed to give information or explanation to patients about their medicines.

The information role of nurses on this ward was also written in the 'Welcome to Ward A' folder made available to patients. This contained a range of information about including the ward philosophy and information about patient counselling that stated:

'The aim of patient counselling is to provide information that the patient can understand and confirm what they have been told by their doctor. Patients may have many questions about their medication.'

The role of the pharmacist was also outlined in the 'Welcome' folder. This was described as one of providing information and advice to doctors and nurses as well as patients and carers. In reality, the information-giving role of the pharmacist was found to be limited. During the period of data collection, the pharmacist attached to the ward was not observed to provide information directly to patients or carers about their medicines. On one occasion, a nurse was observed to ask the pharmacist if there were any special instructions for the medication

to be taken by a patient who was about to receive his TTOs. The special instructions in this instance were limited to the requirement to take aspirin after food.

This limited role was confirmed by two clinical pharmacists in the hospital who were interviewed by one of the researchers prior to participation in the focus group interview at Education Study Site 1. Both felt that the extent to which pharmacists interacted with patients and carers on general medical wards was restricted to a problem or issue raised by the patient or a nurse. One said:

'I think it's much more hit and miss if the ward gets a [medication education interaction], they'll get very ad hoc discussion with the pharmacist if the patient has raised an issue or if there's something about the drug therapy that will make the pharmacist talk to them.' (Ph1A1)

The degree of pharmacist involvement was felt to depend on what pharmacist resource had been purchased by the respective directorates, in addition to the general shortage of pharmacists. The specialist directorates, such as cardiac surgery, were reported to purchase more pharmacist time, but even here, the education role was perceived to be limited. The second pharmacist, attached to a cardiac surgery unit, stated when asked about talking to patients:

'It tends not to be routine. The patients, it'll be if the patients have got particular problems. I wouldn't pretend that I counsel every patient, I mean ideally I would do and that is something to work towards, but I wouldn't say that I do that, but I mean the problem patients, um, I would do.' (Ph2A1)

Whilst the pharmacist's interactions with patients and nurses on the ward was limited, pharmacists did have a defined role in checking the information nurses wrote on the self-medication chart given to some patients on discharge. This was a requirement before the patient could be given the chart. On at least one occasion, a nurse was prevented from providing this supplementary information, in circumstances beyond her control (pressure to admit patients from the A&E department), leading to a hurried and unplanned discharge.

Consideration of the mediation of iAction by the clinical context suggests that such contextual conditions are excluded from and operate on rather than are included in and contribute to the iAction. Here, iAction is reactive rather than proactive. This lowers the readiness-to-assimilate and readiness-to-educate 'glass ceilings' for patients and nurses respectively and limits behaviour options in relation to medication education. Thus, in the concept identification of iAction for medication education, taking responsibility for the exclusion or inclusion of the characteristics of clinical contexts remains polemical for both clinical practice development and for nurse education.

4.5 Retrospectives on educational preparation and iAction

In addition to the observation and deconstruction of the iAction and the *patient scenario*, reflective interviews and informal discussions with nurses on the ward, the ward manager and pharmacists were conducted. These interviews enabled the conceptual boundaries of the components of the *patient scenario* and the *clinical judgement* to be evaluated beyond the merely observed.

The extent to which a past conceptualisation of iAction within a retro-educational setting still informed nurses' current behaviour options, was explored. This also illuminated whether nurses perceived themselves to be reactive or proactive to the clinical context, in relation to both the iAction and to their autonomy for medication education.

The interviews focused on the adequacy of the nurses' preparation for a medication education role in relation to the components: *communication style; patient education skills; and pharmacology knowledge.*

There was general dissatisfaction with the pharmacology component of pre-registration education; some nurses would have preferred greater, formal classroom-based teaching, as learning in practice was variable. Comments suggested that the conceptual boundaries of the individual components were poorly defined and that component integration was not facilitated in-house or during clinical placements.

'No, not at all. Well, you do sort of an hour or so on pharmacology which by no means prepares you for anything. I mean, they just go through, just touch on everything extremely briefly.' (N6A1)

'You're responsible for your own learning really [in the pre-registration education programme], but I did feel pharmacology knowledge is not very good at all. It was something that we all felt when we'd finished the course, and in fact, in evaluations, we all said that we didn't think our knowledge of medication was brilliant.' (N2A1)

'We were supposed to learn a lot of it on the wards, through practical experience. But in the particular hospital where I trained, students were seen as extra pairs of hands, like an auxiliary, make beds, wipe bottoms, haven't got time to go around looking at the doctors' round, or the drug round because we're too busy, so ...' (N7A1)

'I think a lot of it depends on their placements as students and because their course [at Study Site 1] is so much on self-reflective learning, the scope of what ... it varies so much and there will be some that ... and it tends to depend on their placement and if they've had a medical placement, they have quite a good knowledge base, whereas if they've come from somewhere else, it's often not as good.' (N1A1)

Because of the wide range of medicines that nurses may encounter, classroom-based teaching of pharmacology was recognised as problematic. Certain medicines were also specific to certain clinical areas, leading to problematic decisions about what should be taught and when. Perhaps as a consequence of this, nurses reported that they relied on the *British National Formulary* (BNF) to inform their explanations to patients and for writing details of medicines on patients' self-medication forms to take home. Referral to a formulary was seen here as a necessary adjunct to knowledge learnt in formal theory-based sessions and from others in practice.

'I mean, I always have to look at the book, the BNF, and that was really good, because you'd be writing them down, and just getting your BNF out just to check, that you'd remembered to mention everything.' (N5A1)

However, the BNF was not considered to be a substitute for an adequate knowledge base about medication and the application to individual patients' care. Commenting on self-medication charts completed by nurses, a pharmacist who was interviewed said:

'Sometimes you get the most amazing things written on these – not only have they got the medication wrong, but the reason for the medication and you think "oh, oh, you know, completely wrong indication" or in language that patients are not going to understand ... sometimes you can see what's happened, that it's a drug that someone's looked up in the BNF or in a nursing dictionary or a medical dictionary and they'll write down, um, for epilepsy and you know that the patient's not epileptic and the drug can be used for pain or something like that.' (Ph1A1)

Nurses' opinions about communication and patient education skills acquired during pre-registration education varied. However, there was recognition that these skills were important in medication education. The ward manager considered that, at Study Site 1, nurses were well prepared in communication skills.

'Most of them, when they come out of [Study Site 1] have got very good interpersonal skills, so actually sitting down with patients isn't a problem for them at all for them, and they're very much ... because again it's been a very patients-orientated course, they're very good at establishing where a patient's at.' (N1A1)

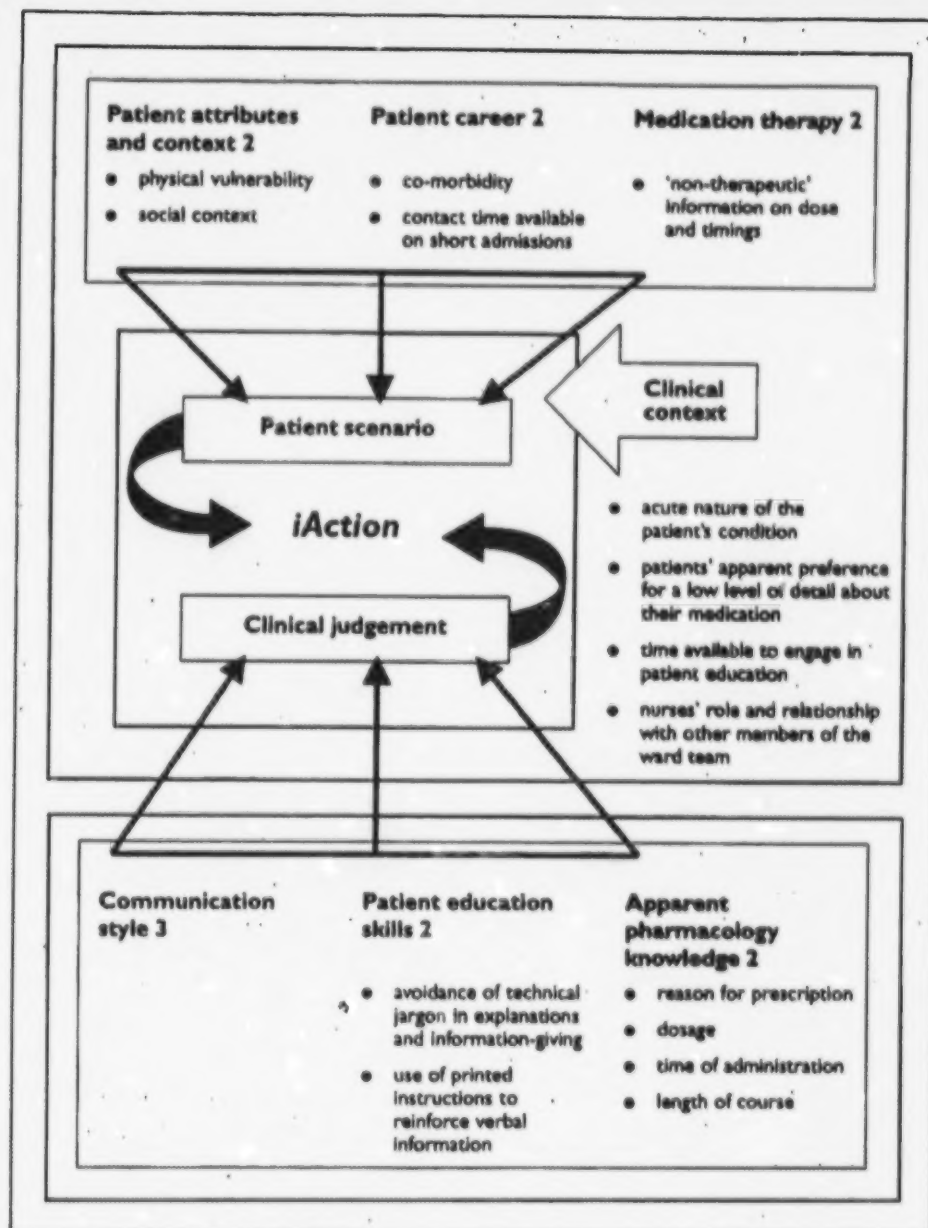
Others' evaluations were more mixed. Two other nurses reported that although teaching skills were included in the pre-registration programme, practice teaching sessions were only helpful if the underlying subject was one about which they felt confident and that education principles were not practised in relation to medication. Nevertheless, one of them had found classroom-based practice teaching sessions helpful in that they had helped highlight the difficulties associated with communicating information and demonstrated that teaching needs to be a planned and progressive process. The variability in teaching skills preparation was further illustrated by a fourth participant who could not remember being formally taught any principles of patient education, and recommended that this be included in the pre-registration programme.

In addition to these evaluations of pre-registration education, it was the view of nurses on this ward that the knowledge, skills and confidence required to inform patients about their medication continued to be acquired in the initial post-registration period: *'as you get more confident after you've finished training then it's much easier'*. The ward manager felt that self-directed learning through looking up prescribed medicines and seeking out people with knowledge was important after qualification. Asked when the knowledge and skills come together for a medication education role, she said:

'You see them come on very quickly, after about six months they're suddenly able to take on more things and certainly by about a year they should be able to, because they should be taking on primary patients, and they do that, and medication education, that should be part of their ... and so certainly within six months to a year I would hope that.' (N1A1)

4.6 Conceptual framework and actual practice base levels for Clinical Area A

Nurses' role and contribution to medication education in Clinical Area A was limited to simple information-giving, instructions at the point of discharge and liaison with professionals/carers; such role and contribution had been constrained by a number of clinical context factors. Figure 4.1 illustrates the reconstructed conceptual framework.



Level 1 Maximal: maximises use of potential evidence base (PEB)
 Level 2 Partial: partially uses PEB
 Level 3 Minimal: minimally uses PEB

Figure 4.1: Conceptual framework and actual practice base levels: Study Site 1 Clinical Area A

Nurses interviewed were dissatisfied with the extent of taught pharmacology in their pre-registration curricula, and pointed to the importance of learning in practice. The patient education and communication skills components of these programmes were variable and received mixed evaluations.

In light of the above, a limited range of sub-component contents were being drawn on to inform nurses' iActions for medication education in Clinical Area A. *Actual practice base levels* were assigned reflecting the practice observed.

iAction in this clinical area was categorised into two main areas; the first of these being sub-categorised into four components.

4.7.1 Facilitation of self-medication

The facilitation of self-medication involved a number of stages and components. Helping patients to self-medicate was the main way in which the patient-centred medication policy was operationalised. The facilitation of self-medication was also felt by nurses to be part of the process of patient-focused individualised care. The lecturer-practitioner noted:

'It's actually having that link of the holistic care and being able to link that to every aspect of a patient's care, of which giving their tablets, educating them with their medication is part of that underpinning practice.' (N1B1)

Patients' ability to correctly administer their medication was a central care-planning goal, given the rehabilitative nature of care on the ward. Thus, self-medication was often initiated as an essential part of the discharge planning process, to ensure that patients could safely administer their own medicines prior to discharge. For other patients, the impetus behind nurses' initiation of self-medication was that it offered the patient more control over this aspect of their care. These patients were usually admitted on medicines that they had been taking prior to admission; they knew their medication and could administer it without difficulty. This ability to control their medicine-taking was viewed positively by patients.

'I like to be responsible for my own medication ... I really do ... Because you know you have them at the right time. You know you're having the right things at the right time.' (P1B1)

A further rationale for encouraging self-medication concerned the safe administration of medicines on lengthy drug rounds. The unit manager also saw that the safety of medicine-taking was enhanced by self-medication. Facilitating medicine-taking at the bedside, when patients know their own regimen and recognise correct and incorrect dosages, was considered as less distracting for nurses.

A number of dimensions of the process of self-medication were identified, which has implications for the construction of the *patient scenario* and the *clinical judgement* and the ensuing iAction. These dimensions were particularly apparent where self-medication had been initiated as part of effective discharge planning, the process beginning on admission.

4.7.1.1 Assessment of suitability for self-medication

Patients' suitability to self-medicate was assessed shortly after admission to the unit using a structured assessment form. Patients were selected on the basis that they were both sufficiently capable of taking their own medicines, and that this was a requirement on discharge from the unit. Conversely, patients who were not mentally or physically able, and/or who would be reliant on others, such as nursing home staff or other carers, received their medications from nurses during their admission period.

4.7.1.2 Assessment of patients' knowledge of medicines

Analysis of the unit's discharge check list and evaluation form indicated that assessment of patients' knowledge about medication was a required nursing role. Assessing whether the patient will be able to take tablets on discharge is preceded by *'Find out what the patient understands about their medication'*. Several nurses mentioned that the process of preparing patients for self-medication began with such a baseline assessment.

F-grade team leader: *'I try and find out initially, what their understanding of their medication is. So, rather than just say, "Oh, you've got your water tablet" I try to sort of say it in their language, rather than diuretic or analgesic, but I try to find out from them what they understand, which is what I did with ... [name] ... initially ... so I think it's finding a baseline, what their understanding is.'* (N2B1)

Three interactions that two nurses had with one patient contained evidence of this:

'What usually happens ... [name] ... when we start someone self-medicating, is we give you a written piece of paper with your tablets on them, and what they're given for ... and the times that you should take them. Now, I will write one of those out, but for today, we'll just talk about the tablets, find out what you know about them ... and the ones you don't know about, and then I'll give you some information on them, OK?' (N3B1)

A number of tablets were due to be taken by the patient, and the nurse used this as an opportunity to go through each of them in turn, offering information as appropriate:

Nurse: *'OK. Do you know the reasons why they might say to take it ... [aspirin] ... dissolved in water, with or after food? D'you know why that might be? Aspirin can be quite irritable on your stomach ... so it's important that you've eaten something first' ... [Patient: 'Yes, yeah, I've read about that ... they make ... black, er bleeding'] ... 'Sometimes it can do that yes, that's one of the side-effects, yes, you're right.'* (N3B1; P2B1)

In a subsequent interaction with this patient, another nurse checked his knowledge and pattern of medicine taking at home:

Nurse: *'The other day I was talking about how you took your tablets at home. Could you tell me how you actually do take your tablets at home?'*

Patient: *'Well, in the morning, I have one ... for arthritis ... that's one in the morning, and ... [Nurse: Do you know the name of that one at all? The arthritis one?]' ... 'No, I'm afraid I don't, yet ... 'cause I take one in the morning, and one at night ... on the same packet. It says on the packet, one at night, and one in the morning, and one in the night, and I take one' ... [Nurse: 'Right. And how do you recognise taking these tablets? By, being able to read the labels, or ... by looking at the tablet?']* (N2B1; P2B1)

4.7.1.3 Provision of information about medication

Assessment of knowledge was followed often by giving information about medication. Information-giving interactions were:

- planned
- formed an integrated part of the patient's care whilst on the unit
- constituted from a series of nurse/patient contacts
- focused around the process of medication administration
- based on the use of a self-medication form.

Consistent with the self-medication forms on the unit, which required the nurse to list the name of the medicine and dosages to be taken at breakfast, lunch, supper and bedtime, information given to patients during interactions was generally limited to name, purpose, timing and correct dosage. The discharge medication record also contained space for name and strength of medicine, reason for taking the medicine, time to take the medication and special instructions.

Patient: *'Is that the heart ones?'*

Nurse: *'That's right, yeah ... Shall I write that at the side? What about the first one, do you recognise ...?'*

P: *'That's the morning ones.'*

N: *'Yeah, they're your water tablets.'*

P: *'That's ... I've been taking one of those. That was, um ... Losec.'*

N: *'They're Losec, it's like Losec, yes, that's right. So that's for your tummy.'*

P: *'Yes, yes. What's that one for?'*

N: *'That's a strong pain killer, the dihydrocodeine.'*

P: *'Oh, it is. Oh, right, well I know what they all are then.'* (N4B1; P3B1)

Information about the side-effects was sometimes included in these interactions, yet this was less frequently observed and recorded. Whilst the patient assessment form for self-medication stipulated that an explanation of possible side-effects should be included in information giving, this was tempered by some of the nurses:

'They need to know what time they need to take them. How many to take, what they're taking them for. Because sometimes they won't take them if they don't know what they're for. If they don't understand, they might not comply, you know. But, I think they need, just need to understand the basics really. Why are you taking it, what time you have got to take it, how many have you got to take, and just the general side-effects. Get a few basic side-effects, if it's warfarin or aspirin. But I mean a lot of tablets have got masses of side-effects, so you might just say to them, "If you're feeling unwell" [emphasis added].' (N5B1)

The researchers also questioned the extent to which it was appropriate to offer information about the side-effects of medication. A 98-year-old patient appeared to be capable of absorbing only limited information about his medications, yet, possibly, was given too much detail by the nurse:

Nurse: *'There we go. It is given for your heart, alright; it's for high blood pressure, for treating your high blood pressure.'*

Patient: *'Yes, I've had that for years, high blood pressure.'*

N: *'And it's also treated for angina, so you know the little bits of pain that you get ... [P: 'Yes, yes, yes'] '... in the heart, that's what helps to reduce that ...' [P: 'Yes, yes, yes'] '... I mean some of the possible side-effects that you might get according to the BNF, which is a book that tells us about tablets and what they're given for, and some of the side-effects ...'*

[P: 'Have I been taking any for the ...'] 'Yes, you have. Sometimes the side-effects are you might get a little bit of headaches ... or even feel a little bit lethargic, fatigued ... very rare, you would get some feeling of sickness or dizziness ... Now last night you experienced what you said was a bit of dizziness didn't you?' (N3B1; P2B1)

On one occasion, a patient was offered simple information about the way in which a medication worked during medication administration time:

Patient: *'Right, I haven't got me right glasses on, I'll put them on.'*

Nurse: 'Isosorbide mononitrate?'

P: 'Isosorbide mononitrate – one tablet.'

N: 'The nitrate's the important word ... Well one of the, yeah ... The nitrate is how it works. If you think about, it's affecting how the heart works, and it's doing it by altering the chemical balance.'

P: 'I see, I'm learning' (N6B1; P4B1)

This patient appeared to remember that she had been given this information when interviewed at home several weeks after the original interaction. She spontaneously and positively mentioned that the nurse had explained what her 'heart' tablet did:

'Well, yes, it was nice to know, yes it was nice to know how I think it was the heart one, she split the word and explained it and what it was for ...' (P4B1)

Generally, however, the information offered to patients consisted of the name of the tablet, its purpose, the timing of administration and the correct dosage.

4.7.1.4 Provision of aids to medicine taking

In addition to assessing knowledge and providing information about medicines, a further dimension of the nurse's role in facilitating effective medication-taking was to ensure that patients had aids to support this process. In addition to using the discharge medication record, nurses were observed to assess patients' eyesight and manual dexterity in opening containers at medicine-taking times. In a number of cases, large-print labels were ordered from pharmacy and changes to packaging were made, such as the use of blister packs instead of bottles. These activities were prompted by the patient assessment for self-medication form, which asked the following:

- can he/she open bottles/foil packets/click-clock?
if no, contact pharmacy and discuss alternatives (e.g. Dosett boxes)
- can he/she read the labels?
if no, contact pharmacy to get bigger print.

The checklist and evaluation form for patient discharge (CEPD) also contained questions on whether patients could read labels and open bottles. The process of assessment and liaison with pharmacy for the appropriate aids was followed by re-evaluation of the patient's ability to administer medication at different points leading up to discharge.

Nurse: 'We spoke yesterday about the labels on your tablets not being big enough for you to read. We've changed that now to bigger labels – is that helpful to you?'

Patient: 'Oh yes, it's wonderful. I can see them even without my magnifying glass ... So it will be a great help and save me a lot of time too trying to sort out the boxes and the labels. In fact, sometimes my grand-daughter has had, they're so pale that she's put a white label on and told me what is on there.' (N5B1; P5B1)

4.7.2 Liaison with patient carers

A final dimension of the nurse's role concerned liaison with carers who would be supporting patients who were unable to take their medication independently on discharge. These patients were assessed as unsuitable for self-medication whilst on the unit. Liaison took place with formal carers such as community nurses, HCAs and GPs, as well as members of patients' extended families. Whilst several nurses reported that family carers were involved in education about patients' medication on the unit, interactions of this nature were not witnessed during data collection.

Carers' focus group data (CFG Box 4.1) indicated that experiences of medication education with health care professionals were less than satisfactory. Carers' unmet needs for information and infrequent contact with nurses would suggest that ward-based carer education and liaison prior to discharge is essential.

The group discussion took place in March 1998 at a carers' support group meeting. Eleven carers were present; all had experience of acting as a main carer to a member of their family or other caree. Their carees were adults with a variety of conditions requiring care, for example, CVA and post kidney transplant care. The majority of those present were currently or had been involved in the administration and monitoring of medications with their caree. Some also had experience of taking medicines themselves. Most had also experienced some degree of interaction with health care professionals as a consequence of being in a caring role. A number of findings emerged from data analysis.

- The carers' information needs about medication were identified as a preference for knowing about side-effects, what the medication is and its compatibility with other medicines prescribed. Evaluation of whether this information had been received, and from whom, was mixed.
- The local pharmacist was perceived by a number of carers to be the best person to turn to for advice. This was related to their perceived accessibility and knowledge, and carers gave examples of when pharmacists had given them written details of medicines (what they were for, dosages, length of storage time and side-effects) as well as instances when they had identified for them incompatibilities between medicines prescribed by the doctor.
- Carers' experience with doctors (mostly GPs) and medication education was generally evaluated poorly. It was felt that they did not always provide information about side-effects and carers were often left to find these out for themselves. Another carer reported her experience of a GP prescribing medicines for her mother which were not compatible – she discovered this through reading her own copy of MIMS and reported this back to the GP.
- Similarly, carers did not rate their contact with nurses positively. There was a general feeling that they had little contact with nurses, and even less about medication. Several reported that even when they had been informed that nurses would visit regularly (for example following discharge from hospital or to change a catheter) this did not materialise into more than one visit at most. When nurses did visit, there was a feeling that they did the minimum possible due to time pressures and therefore medication issues were not addressed. Carers felt that this was partly due to 'cutbacks' in the trust.
- Carers' experiences with their own medication whilst in hospital were also viewed negatively. Two commented on the fact that they were not listened to whilst in hospital, and that their usual medications had been changed and/or taken away leading to changes in administration times. For one carer, this had led to significant problems with control of a long-term condition that had taken a considerable time to re-stabilise following discharge.
- There was also strong agreement in the group that health care professionals were not as 'dedicated' as they used to be. Carers also suggested that nurses needed extra education about working with carers and their information requirements.

CFG Box 4.1: Study Site 1: summary of analysis of carers' focus group

Although patients were assigned either a nurse, physiotherapist or occupational therapist as a key worker, depending on their rehabilitation needs, during the period of data collection, nurses were the main providers of medication education due to their close and continuous contact with them. No medication-related interactions were witnessed between patients and physiotherapists, occupational therapists or GPs.

A named pharmacist was linked to the unit, being resourced from the main hospital in which the unit was located. The lecturer-practitioner commented that the unit was fortunate in this respect, as other community hospitals in the trust were stand-alone and therefore only had visiting pharmacists. The pharmacist role was perceived by the nurses as an occasional, specialist resource. Nurses would draw on the pharmacist when a patient required specialised 'counselling' that was beyond their pharmacology knowledge. During the period of data collection, the pharmacist was seen to visit the unit to check stock medicines, but was not observed interacting with either nurses or patients about medication education. Thus, the prime responsibility for medication education was invested in the nurses on this unit.

4.8 The clinical context of Hospital B on nurses' iActions

The impact of the clinical context was identified by observations and interviews. Whilst not commenting directly on the context, patients' views on medication education episodes added to the understanding of how nurses mediated the impact of contextual factors and retained the 'boundaries' of what counts as medication education.

The extent to which nurses could engage in a series of planned iActions about medication with patients in Hospital B appeared to be influenced by a number of factors:

- patients' ability to take their medications successfully was facilitated by the philosophy of rehabilitative care that underpinned all activities on the unit
- the utilisation of assessment tools (patient assessment for self-medication; discharge medication record; CEDP) required medication-taking ability to be taken into account. Nurses were required to consider:
 - does the patient need constant reminding or support?
 - is the patient safe and able to comply with the prescription? (CEDP)
- the provision of individual boxes by the bed for the storage of patients' medication when self-medicating
- the unit was largely nurse-led
- the timing of discharge was a multidisciplinary decision, with nurses contributing as a key worker when medication was an issue
- 'self-medication was dependent on the presence of the permanent qualified staff for initiation and continuity
- shortage of time due to pressures of workload
- below establishment staffing levels necessitating a high use of bank staff
- a lengthy period of reconfiguration for the trust and the uncertainty surrounding the future of the hospital contributed to on-going difficulties in recruiting and retaining permanent staff.

Patient views of medication education were elicited following observation of a medication-related interaction or during their pre-discharge period. They were asked:

- what information they had been given about their medication
- whether this had added to their existing knowledge
- whether they desired any additional information
- whether they felt able to take medication effectively on discharge.

The majority of patients interviewed were taking medications that they had previously administered at home. Some had been prescribed supplementary medications whilst on the

unit, or during their preceding acute hospital admission. Generally the latter were not complex medicines and some were for a limited duration only, for example, analgesics, aspirin and iron supplements. These factors appeared to influence patients' information needs. Patients already had the necessary knowledge to take their medicines effectively or had received information about the name and what it was for, and were generally satisfied with this level of information, enabling effective medicine-taking. Whilst there appeared to be a general level of satisfaction with relatively limited information, questioning prompted the identification of unmet information needs in relation to side-effects. A preference for information about the side-effects was also a strong theme to emerge from the focus group discussion with carers at this study site. Whilst carers expressed a preference for receiving such information, they reported that, in their experience, explanations from health care professionals had not been forthcoming.

One patient, who had had diabetes for over 40 years and was used to insulin management, was an exception in this respect. She always asked doctors or nurses for information on changes to prescriptions, possible effects and the period she would need to be on particular medications. That she had to ask was a concern:

'I do wish people would more openly give it [information], you didn't really have to ask all the time. I suppose really they don't know who wants to know or who can accept it.' (P6B1).

Similarly, patients were able to identify that their needs for information about medication were not met during their prior acute ward admission(s) in the way that they had in Hospital B. Patients were aware that there was a link to the acuity of their illness, such that they felt more ready and able to assimilate information in this rehabilitation setting. Here, self-medication was generally regarded as favourable by patients as a means of preparation for discharge and of feeling in control. The acquisition of large-print labels was viewed positively, although two patients bemoaned the state of their own long-term memory:

'You see I understood it [the information provided by the nurse] but it goes somehow, I don't know. 'Cause it don't stick, that's the trouble. It's the funny names.' (P3B1)

Consideration of the mediation of iAction by the clinical context suggests that such contextual conditions were included in and contributed to rather than were excluded from and operated on the iAction. Here, iAction was proactive rather than reactive. Nurses were individualising advice in relation to patients' attributes in a context in which self-medication, *qua* patient-centred philosophy of rehabilitative care, operated despite the workload, staffing and uncertainty surrounding the future of the unit. This raised the readiness-to-assimilate and readiness-to-educate 'glass ceilings' for patients and nurses respectively, yet may still have limited the behaviour options in relation to medication education. There is evidence to suggest that the utilisation of assessment tools (patient self-medication assessment form; discharge medication record; CEDP) and the self-medication programme itself constructed an explicit agenda for iAction. For example, although the self-medication assessment form recognised the need for explaining and understanding 'possible side-effects', patients' need in this respect was unexplored. Furthermore, whilst the self-medication programme was patient-centred, no patient-centred medication education took place with patients judged unsuitable for the programme. Thus, a more limited range of behaviour options for other interactions may also have been set, albeit implicitly, by the self-medication agenda even when the programme was not in use.

Preparing students, both pre- and post-registration, for the task of juxtaposing the proactive inclusion of clinical context or the reactive exclusion of clinical context within a philosophy of care, remains polemical. Such a task, in the concept identification of iAction for medication education, is for the attention of both clinical practice development and for nurse education.

CHAPTER 4 4.9 Educational preparation and iAction: reflection and retrospectives

In addition to the observation and deconstruction of the iAction and *patient scenario*, reflective interviews and informal discussions with nurses were conducted. These enabled the conceptual boundaries of the components of the *patient scenario* and the *clinical judgement* to be evaluated beyond the merely observed.

The extent to which a past conceptualisation of iAction within a retro-educational setting still informed nurses' behaviour options was explored. This also illuminated whether nurses perceived themselves to be reactive or proactive to the clinical context, in relation to both the iAction and their autonomy for medication education.

All the nurses interviewed had been qualified for over five years. Additionally, team nursing facilitated their continuity of contact with patients over a period of weeks. Thus, the utilisation of individualised assessment skills in performance of the roles specified above was apparent in these reflective interviews in relation to decisions about the information offered and patients' social circumstances:

'What I wouldn't want to do is overload him with things that he's taking at a different time because it's more sensible to me, in a patient's education, particularly someone like ... [name] ... who's 98, he does have some memory problems, that he focuses on the time of day and the tablets he's actually taking, so you can place more emphasis on that particular time.' (N3B1)

'If it's going to be a carer from the community, and it could be a different carer every day, the care assistant's going in, it might just be a supervisory role, just saying, "Oh, don't forget to take your tablets" and they just remind them and watch them tip them out. But in that case we normally make sure the patient's got quite a good understanding, but they might, you know, just need a little bit of supervision, just to make sure they've taken them really.' (N5B1)

The level of pharmacology knowledge, drawn on by nurses in their interactions with patients was relatively simple, limited to the purpose of a range of common medicines. The mechanism of action was explained on one occasion, as was the side-effects of a medication (aspirin). Nurses considered a basic knowledge of the major medicines used on the unit was required, together with use of external references such as the BNF, MIMS, or the pharmacist for more specialised or less common medications.

Nurses drew on some of the sub-components of *patient education skills* and *communication style*, this knowledge and skills being largely acquired in practice:

- assessments of patients' existing knowledge of their medications
- planned, sequenced and integrated interactions
- checking and evaluating of skills and knowledge imparted
- using listening and questioning skills appropriately.

'I suppose just practice. I doubt, I don't, I remember some things from college, doing my training, but not a lot ... I consider myself a good communicator with the clients I'm working with, but why, how I've come to that, I couldn't, I couldn't tell you. I've learnt a lot from others ... that I've worked with in the past I know I've learnt from.' (N4B1)

Nurses alluded to the fact that they remembered little from pre-registration education that prepared them for their current role, but had subsequently undertaken post-registration Board-approved programmes.

'I've done certain courses on communication skills and, not long courses, but you know, just day courses, stuff like that, and I've done 998.' (N4B1)

'I mean I have done courses which have identified [pharmacology knowledge], but it probably is something that warrants having a module of its own really, or you know, some sort of ENE course.' (N2B1)

Second-year pre-registration undergraduate students on the unit were not observed to be actively engaged in patient education, and this was consistent with nurses' expectations of them. However, the lecturer-practitioner expected them to be aware that they needed to develop these skills. Students on their first or second ward would be supported by facilitating: observation of medication administration; talking to patients about their tablets; familiarisation with the layout of a drug chart; what constitutes a 'good prescription'; and through encouragement to access information from the BNF. This would be followed by supervised administration of medication to patients. However, facilitating self-medication was thought to require greater experience and confidence:

'I would expect the mentors to actually help develop that confidence and developing their own knowledge and developing that rapport with patients.' (N1B1)

'Self-medication programmes take slightly longer and it depends on the individual patients that you're dealing with and their understanding of their medication in the first place, and any new tablets that have been introduced. So I wouldn't automatically put a student nurse into supporting a self-medication programme or even introducing it, until she's got a fair knowledge base about the tablets she's giving out, the layout of the drug chart and her own accountability and responsibility those, and mine as her mentor, or his mentor.' (N3B1)

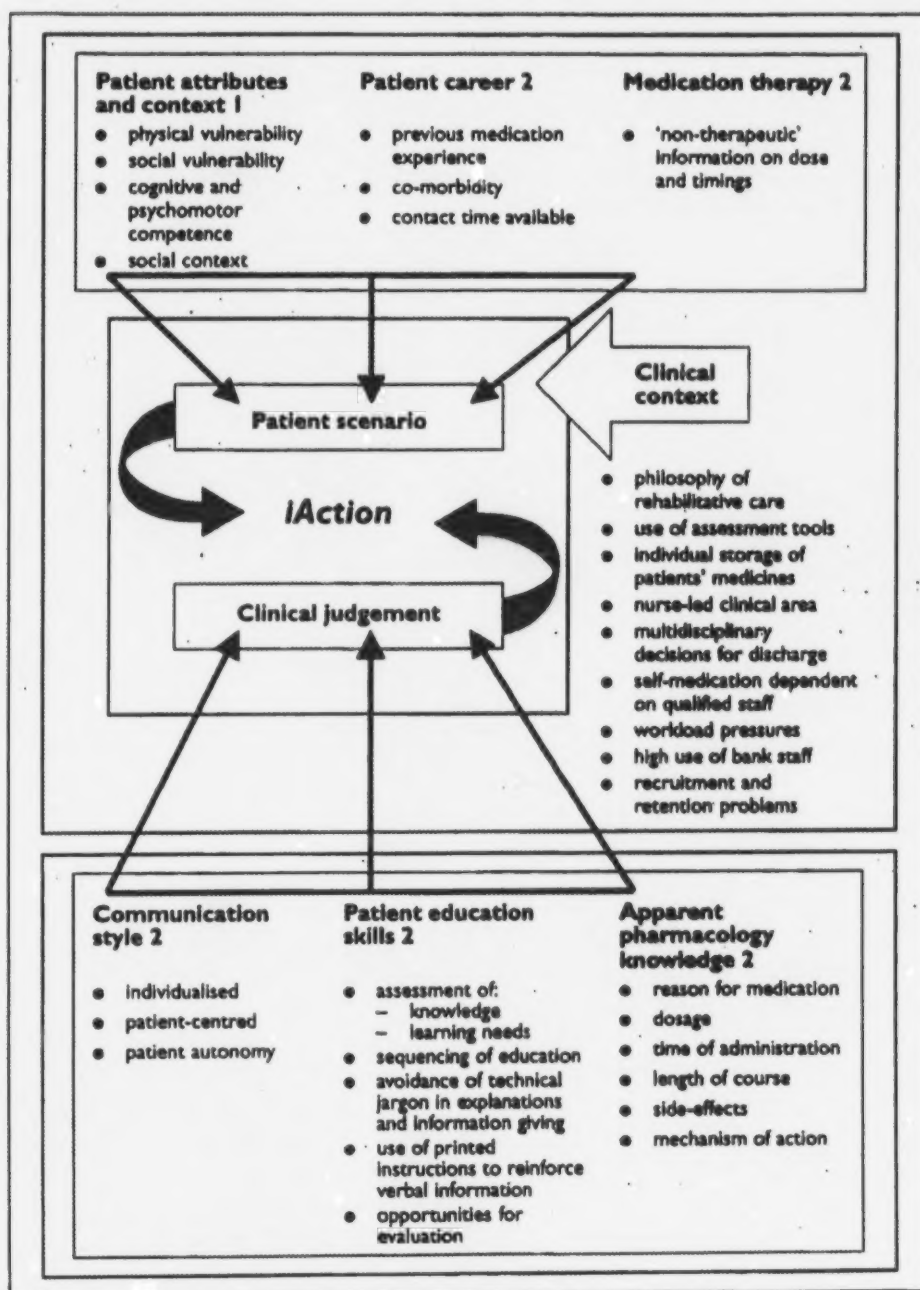
The lecturer-practitioner also considered that students were inadequately prepared for their role in medication administration. This had been highlighted as an area to be added to the content of a module on caring for the older person, on which the lecturer-practitioner taught at Education Study Site 1. Here, the link between administration and patient education in the iAction of medication education is seen as sequentially developmental, administration being the antecedent skill.

'...[we] will look at practical skills and look at medication that way, so we all ... [lecturers] ... met at the beginning of the year to look at that a bit more, and that I seem to remember was partly through a student evaluation because one of the things that the students were concerned about was actually their practical skills of giving medication in a variety of ways, is one of the things they highlight, they don't necessarily have the ability to practise giving injections, and obviously that depends on the placement, and so in terms of making that theory practice link, we've added medication to the module.' (N1B1)

4.10 Conceptual framework and actual practice base levels for Clinical Area B

Findings from Clinical Area B indicated that nurses' contribution to medication education had developed around the facilitation of self-medication as well as liaison with carers. Deliberate manipulation of a number of clinical contextual variables had allowed facilitation of self-medication to take place. Other factors, beyond nurses' control operated to militate against the quality and quantity of medication education iActions. The self-medication programme involved nurses engaging in a series of iActions that drew partially on the sub-components identified in the conceptual framework. In this respect, nurses interviewed commented on

CHAPTER 4 the importance of the knowledge and skills that they had acquired in practice, and also pointed to the contributory importance of post-registration Board-approved short programmes. Figure 4.2 shows the reconstructed conceptual framework for Clinical Area B.



Level 1 Maximal: maximises use of potential evidence base (PEB)
 Level 2 Partial: partially uses PEB
 Level 3 Minimal: minimally uses PEB

Figure 4.2: Conceptual framework and actual practice base levels: Study Site 1 Clinical Area B

4.11 Study Site 1: Educational Institution

Study Site 1 is situated in central England. The educational institution is a large school of health care within a post-1992 university. At the time of data collection, it offered a four-year undergraduate degree programme with adult, mental health, learning disability and children's nursing branches. A degree programme was also offered in midwifery. A range of

post-registration dual-exit specialist programmes was also available, including diploma/MSc programmes preparing practitioners in (i) the care of older people, and (ii) for more autonomous practitioner roles in health care. These programmes increasingly offered opportunities for multiprofessional learning, as physiotherapists and occupational therapists also studied at the university. Staff in the nursing department comprised principal lecturers, senior lecturers and lecturer-practitioners. Lecturer-practitioners' time was divided between the institution and their clinical area.

Pre-registration undergraduate students gained clinical experience on placements within one hospital trust (with three hospital sites) and one community trust local to the school. Post-registration students work in these and other trusts within travelling distance of the institution.

4.12 Research activities at the Educational Institution

Research activities at Study Site 1 included a focus group, interviews with key personnel and non-participant observation of classroom sessions, followed by student interviews.

Participants were selected for the focus group at Study Site 1 on the basis of their potential for offering key perspectives and insights into adult and care of the older person preparation for educating patients, clients and carers about medication. Eleven participants attended the focus group discussion:

- senior lecturer – adult nursing
- senior lecturer – adult and care of the older person nursing
- senior lecturer – adult nursing
- lecturer-practitioner/senior nurse – adult nursing (surgery)
- lecturer-practitioner/senior nurse – adult nursing (cardiothoracic surgery)
- lecturer-practitioner/senior nurse – adult nursing (neurosurgery)
- lecturer-practitioner/senior nurse – adult nursing (cancer care)
- lecturer-practitioner/field chair – learning disability nursing
- staff nurse – adult nursing (acute medicine)
- principal clinical pharmacist – secondary care
- clinical pharmacist – secondary care.

Individual interviews were also conducted with key personnel:

- School of Health Care
 - Deputy head (curriculum)
 - Head of biosciences group
 - Head of family and life cycle group
- School of Biological Sciences
 - Clinical physiologist
- Hospital NHS Trust
 - Principal clinical pharmacist
 - Clinical pharmacist

Twelve classroom-based sessions were observed; six were within the BA adult nursing programme, four within the post-registration diploma/MSc care of the older person programme and two within the diploma/MSc programme preparing practitioners for more autonomous

roles. Student interviews were conducted with second- and third-year BA students, as well as students on the post-registration programmes identified above.

4.13 Pre-registration curriculum overview

The BA programmes in nursing and midwifery formed five double fields within a modular programme. A field is a group of educationally associated modules equivalent to a single subject; double fields comprised educationally associated modules equivalent to two single fields, but concentrated on one subject area. Each module carried 15 credits and 120 hours of learning. The academic year was divided into three terms, and students were required to study three to four modules per term. Modules were designated as university- or practice-based; these ran concurrently and each comprised 50% of the total modules. Practice-based modules were designed to allow students time for discussion, reading and reflection related to the needs arising from their experience. Both mentors in the practice setting and lecturer-practitioners facilitated this process. The concurrent focus on university- and practice-based modules ensured that each week students spent time in both educational and practice settings. Students selected their specialist branch on entry to the programme, but studied together for the first two years (and with midwifery students for the first year and two terms of the second) before focusing on specialist modules.

Students were assessed on each module at the end of the term. For university-based modules, assessment strategies were varied and reflected the nature of the learning. Methods incorporated examinations and coursework-based assessments including projects, reports, essays and seminar presentations. Practice-based modules were assessed through a framework comprising learning contracts, competencies to be achieved and grading of practice.

The definitive curriculum document stipulated that the programme design was underpinned by a number of principles:

- the importance of education based on practice and the theory underlying practice and the belief that much education should take place in the practice areas
- shared learning between students preparing for different parts of the register is valued, together with adequate opportunities to acquire the distinct perspectives, knowledge and skills required for practice in midwifery or one branch of nursing
- a need to understand health, health care in the community and lay concepts of health, illness and health care before learning how to care for people experiencing health changes or disorders in a variety of institutional and community settings
- a commitment to person-centred nursing and midwifery
- the importance of student responsibility and accountability for their own learning, individually, and in collaboration with other students
- the aim of progressive development of the knowledge, skills and competencies required for practice throughout the course.

4.14 Pharmacology teaching

Pharmacology teaching in the pre-registration curriculum was undertaken by lecturers from the school of biological sciences. This was integrated into a number of different modules. In the first year, pharmacology was taught in relation to anatomy and physiology within science modules. In the second year, some pharmacology was covered within modules on functions of the human body, and physiology. Under the former, an introduction to pharmacology is one of five themes, the others being:

- the anatomy and physiology of the digestive system
- food and human nutrition

- the structure and function of the liver and pancreas
- the renal system and fluid balance.

Learning outcomes associated with this module pertinent to pharmacology were that students would have had the opportunity to:

- state the major routes of drug administration
- explain the physiological factors which may influence drug uptake, usage and catabolism.

Within the physiology module, pharmacology-related content included sessions on neuro-transmission and the structure of the synapse, as well as the brain, behaviour and drugs. Learning outcomes, indirectly related to pharmacology, concern:

- description of the physiology of the action potential and synaptic transmission
- the ability to relate brain function to behavioural response.

In the third year, pharmacology content was a component of science modules in which specialised branch-related topics were addressed. In these modules pharmacology related to specific patient groups and/or disorders was covered by nurse lecturers. For example, a session on diabetes by the lecturer-practitioner/clinical nurse specialist for diabetes included pharmacology related to insulin and other medications for diabetes.

An interpersonal skills double module in the third year also covered issues of potential relevance to medication education. According to curriculum documentation, in the third term of this year, there is an in-depth examination of the interpersonal elements of interviewing and assessing clients, using video and audio-tape exercises. Students were required to:

- develop effective communication/presentation skills in a variety of contexts, for example, presenting information to clients and relatives and interviewing
- show sensitive and effective use of appropriate language in both written and spoken form
- critically evaluate the process of communicating including questioning, active listening and dealing with questions.

Details of the observed pre-registration teaching sessions are outlined in Table 4.3.

Module	Session title	Duration	Lecturer	Student group	Post-session interview
1. Elderly and adult care	Medication and the older person	2 hours	Senior lecturer	Second-year BA	n = 14
2. Elderly and adult care	Medication and the older person	2 hours	Lecturer-practitioner	Second-year BA	n = 13
3. Physiology	Neuro-transmitters	1 hour	Clinical physiologist	Second-year BA	
4. Physical impairment, disability and handicap	Client education	2.5 hours	Lecturer-practitioner	Third-year BA	n = 5
5. Clinical sciences	Diabetes	2 hours	Lecturer-practitioner	Third-year BA	
6. Clinical sciences	Diabetes practical	3 hours	Lecturer-practitioner	Third-year BA	n = 7

Table 4.3: Study Site 1: pre-registration teaching sessions observed and student interviews

The diploma/MSc programme in care of the older person programme comprised six modules for the diploma and eight for the MSc qualification, both routes being taken part-time over two years. Content relevant to preparing nurses for a post-registration, specialised role in medication education was integrated into a number of modules. Issues related to concordance and nurses' responsibilities arose as part of a module on legal and ethical issues, or could form the focus of either student-selected critical incidents or the independent study module. This was also the case with an observed module on ageing processes, in the second term. On this programme, students working in a variety of environments attended the university one day a week. The content of the module was delivered over each of nine weeks via two 90-minute lecture sessions. None of the learning outcomes specified in the module handbook related specifically to medication education or administration, although indirect links could be made with some of these. For example, reference was made to students' ability to:

- critically evaluate key biological theories of ageing
- explore the range and variation of age-related physiological and psychological changes as they affect individual older people encountered in practice
- appraise key psychological and social theories of ageing (including such factors as gender, sexuality, ethnicity, culture and locus of control including the promotion of health)

The sessions observed by members of the team occurred in weeks 5-7 of the modular content.

The second post-registration programme sampled for observation and student interview was that preparing practitioners for more autonomous roles in health care. The programme ran part-time over two years and led to either a postgraduate diploma or MSc.

Following discussion with key staff, two sessions on pharmacology within a first-year module focusing on principles of diagnosis and intervention (Level 3 module) were selected for observation. The module content was covered by a series of lectures, seminars and workshops and was assessed by a 3,000-word written paper. The aim of the module was described in the module handbook as being to enable practitioners to gain a greater understanding of the relevant theoretical perspectives supporting the initiation of clinical investigations and/or prescription of medication/X-rays.

Learning outcomes pertinent to the focus of the project were listed as the ability to demonstrate:

- application of the principles of pharmacology, including pharmacokinetics, pharmacodynamics and prescribing to practice
- prescribing and dispensing drugs within recognised protocols
- use of effective communication skills within the learning and clinical environment.

Other learning outcomes, reflective of the programme content were concerned with radiography, medical physics, immunology, epidemiology, biochemistry, microbiology and clinical haematology.

The module ran over nine weeks and was delivered in weekly three-hour sessions led or facilitated by the module leader who was a lecturer-practitioner for cardiothoracic surgery. Students were required to complete three pre-module work booklets, on immunology, microbiology and biochemistry, to ensure that a basic level of knowledge could be developed. The sessions observed by members of the research team were in the third and fourth weeks of the programme and were entitled:

- an introduction to pharmacology
- an overview of immunology and microbiology.

Details of the observed post-registration teaching sessions are outlined in Table 4.4.

Module	Session title	Duration	Lecturer	Student group	Student interview
Ageing processes	Integrated perspectives on ageing	1.5 hours	Consultant geriatrician	Diploma/MSc elderly care	
Ageing processes	Medication and older people I	1.5 hours	Pharmacist	Diploma/MSc elderly care	
Ageing processes	Integrated perspectives on ageing	1.5 hours	Consultant geriatrician	Diploma/MSc elderly care	
Ageing processes	Integrated perspectives on ageing	1.5 hours	Consultant geriatrician	Diploma/MSc elderly care	n = 5
Principles of diagnosis and intervention	Pharmacology	1.5 hours	Lecturer-practitioner	Diploma/MSc autonomous health care roles	
Principles of diagnosis and intervention	Bacteria, viruses and antibiotics	1.5 hours	Lecturer-practitioner	Diploma/MSc autonomous health care roles	n = 4

Table 4.4: Study Site 1: post-registration teaching sessions observed and student interviews.

4.16 Concept analysis and Education Study Site 1

In the theoretical framework the components of *communication style*, *patient education skills* and *pharmacology knowledge* are seen, within the broader educational context, to provide specific inputs into the *clinical judgement* of nurses that, moderated by the *patient scenario*, led to iAction. It is the formal and informal curriculum that can be considered to prepare student nurses for such iActions. The questions for curriculum designers to ask, as noted in Chapter 1, are:

- how do educational episodes contribute to the quality of practice?
- how does the observed quality of practice relate to:
 - the theoretical knowledge included within the curriculum
 - how such theoretical knowledge is applied in the practice context?

In the identification of the concept iAction for *medication education*, the antecedents, the components require their own identifying process, their own definition of boundaries. In evaluating such a process of concept identification or development, the 'assessed' maturity of the concept will determine the ease with which it is possible to answer the questions above. The thematic categorisation of the data listed below is, thus, part of the process of filling in the gaps of descriptive information required, regarding the characteristics, antecedents or consequences of each *component concept*, to increase its maturity quotient. Each *component concept* is at its own stage of maturity. Curriculum designers, who do not recognise or understand the not-un-delineated nature of the *components* and the independence of their states of maturity, could have false expectations of the components' integrated impact on *clinical judgement* or iAction. Similarly, if their level of abstractness is so contextualised or situation-specific and, more importantly, no responsibility is seen to be taken to control the context, the contiguity and contingency of educational with practice experience will be unacceptable for the standards of care often cited as central to curricular stratagem.

Some themes that were related to programme content and structure were consistent across the groups interviewed, whilst others were the unique perspective of a particular group. Where there were conflicting opinions about an issue, these were noted; the themes related to the questions:

- What criteria define the range and depth of study of pharmacology required for inclusion in the curriculum? (content pharmacology)
- What criteria define the conditions for teaching theoretical as distinct from applied pharmacology? (application pharmacology)
- What criteria define the conditions for the explication of the above organisationally, in relation to teaching personnel and to other parts of the curriculum? (organisation pharmacology)
- What criteria define the range and depth of study of patient education and communication skills required for inclusion in the curriculum? (content patient education and communication skills)
- What criteria define the integration of pharmacology knowledge with patient education and communication skills? (integration)
- What criteria are used to identify approaches to teaching and learning? (teaching/learning mode)
- What criteria are used to inform the contextual factors that relate to clinical practice? (context)

4.17 Conceptual themes (I)

Three of the above questions related to conceptual themes (I) that emerged from the data analysis: content pharmacology; application pharmacology; and organisation pharmacology. The themes were:

- dissatisfaction with the extent of taught pharmacology
- permeation, integration or discrete subject
- the impact of 'teacher'.

4.17.1 Dissatisfaction with the range and depth of classroom-based pharmacology teaching

This dissatisfaction had its antecedents in reliance on practice-based learning. A dependence on mentors to take responsibility for this learning experience had placed a heavy burden on them. Consequently, supernumerary pre-registration students did not seek opportunities to develop responsibility for their own learning experiences, including those in pharmacology.

'... we went too far down the line, education went too far down the line with expecting students to learn and think and analyse, and make relative decisions about everything in practice, rather than take everything back to more formal settings for teaching, to let them bounce from there into practice.' (LIES1)

The extent of medication-related information that nurses potentially needed to know was confounded with lecturers' comments that they were trying to fit a tremendous amount of material into a comparatively short time.

National survey data provided evidence of the amount of taught pharmacology included in the curriculum in institutions providing higher education in England, in terms of

number of hours within both common foundation (CFP) and branch programmes (NSD Box 4.1). NSD Box 4.2 indicates a general dissatisfaction with the time allocated to pharmacology.

Programme	Hours						NA
	0-5	6-10	11-15	16-20	21-25	26-30	>30
DipCFP	38.1	45.2	2.4	7.1	2.4		4.8
DipA	11.6	37.2	25.6	11.6	7.0	2.3	2.3
DipMH	27.0	27.0	18.9	8.1	8.1		8.1
DgCFP	25.0	21.4	17.9	7.1			28.6
DgA	10.0	23.3	13.3	13.3	6.7	3.3	26.7
DgMH	3.6	17.9	14.3	14.3	3.6		46.4

NSD Box 4.1: Number of taught/teacher directed hours in the pre-registration curriculum dedicated to the teaching of pharmacology: (% of Section 1 respondents)

Likert item: Generally, there is sufficient time in the pre-registration nursing curriculum dedicated to pharmacology						
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Section 1 and 2 Pre-registration respondents (n = 89)	18%	46.1%	11.2%	21.3%	3.4%	:

NSD Box 4.2: Time dedicated to pharmacology

Consequently, one lecturer commented on the density of the sessions:

'There are just too many [drugs] to know all of them safely, and I'm sure that you know we shouldn't perhaps be expecting our students to know absolutely everything.' (L2ES1)

Limiting both the breadth and depth of medication knowledge, appropriate to students' stage of training and clinical experience was seen as a potential solution. Focus group participants generally agreed that there was, for second-year students, a core group of medicines about which they needed to know the basic principles. These were identified as generic groups such as analgesics, antibiotics and antidepressants or those common to the clinical specialty in which the student was working. Prioritising the level of understanding was seen as a way of addressing the depth of knowledge needed. For example, one lecturer suggested that:

'There's a limit to what you can expect them to understand versus know, so yeah, they can tell the patient it's an antidepressant or you know, but do they fully understand it sufficiently in the whole complexity of the way that antidepressants work and you can't expect second-year – you're going to have a job with a fourth-year at that level. It becomes then going into your specialty as a post-registered nurse and develop a specialty and you get familiar with them.' (L3ES1)

In addition to formally taught content, it was recognised that some degree of self-directed learning was required. Students were expected to show interest on the ward, utilising the BNF, the ward pharmacist and mentors as appropriate resources.

'[The students] ... do actually make an effort to go away and learn the major drug groups that we're using, and that those are, I would say are the basic things.' (LAES1)

'What I do is write down on a piece of paper what drugs I have been involved in giving out during the day and then I look them up at home and write down really briefly what they are and a few side-effects and I keep that piece of paper in my pocket.' (S1ES1)

4.17.2 Integrating pharmacology teaching

Dissatisfaction with the current model of integrating pharmacology teaching within other modules, seen as *'it's all mingled together and not very clear'* (Student interview 1), had led students to seek a more structured approach to the teaching of this subject. Consequently, in the new three-year undergraduate curriculum to be validated and operational that autumn, a discrete pharmacology module for the adult branch was to be introduced; further details were not available at the point of data collection. However, not everyone appreciated its potential benefits. One principal teacher of pharmacology within the current curriculum structure, argued in favour of continuing to use an integrated approach. He felt, based on 12 years of teaching pharmacology, that it was a mistake to have a discrete module, since, in the past, it was *'unanimously'* and *'extraordinarily'* unpopular with nurses.

'This was mainly because it is too intensive a subject in terms of the molecular mechanisms and the sheer breadth of drugs nurses need to know about these days. It was too much information to assimilate in one semester. It was very difficult to teach and very difficult for the students so I was pleased to see here that it was integrated over a longer period of time.' (L5ES1)

NSD Box 4.3 illustrates that, in the majority of educational institutions, pharmacology is integrated with other modules. There is a fairly even split between integration with bioscience and with *'nursing'*-type modules. As NSD Box 4.4 indicates, just under half of the respondents disagreed that pharmacology should be taught as a separate module.

Programme	Discrete module	Integrated module	Integrated with bioscience	Integrated with 'nursing'	N/A
DipCFP	16.7	81.0	53.0 of 81%	41.0 of 81%	2.4
DipA	16.7	81.0	41.0	52.9	2.4
DipMH	17.9	76.9	33.0	63.3	5.1
DgCFP	10.3	62.1	50.0	50.0	27.6
DgA	9.7	64.5	45.0	50.0	25.8
DgMH	3.7	44.4	41.7	50.0	51.9

NSD Box 4.3: Is pharmacology taught as a discrete module or integrated with other modules? (% pre-registration Section 1 respondents)

Likert item: <i>Pharmacology should be taught as a separate topic not as part of a biosciences module/subject area</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Pre- and post-registration respondents (n = 126)	6.3%	42.1%	23%	22.2%	6.3%

NSD Box 4.4: Should pharmacology be integrated or discrete?

4.17.3 Who should teach pre-registration nursing students

Current practice at Study Site 1 was to employ a small team of clinical physiologists from the school of biological sciences. These lecturers also had health care profession-related backgrounds (nursing and paramedical). Pharmacology was also taught by nurse lecturers in relation to specific disorders or patient groups. As described above, a previous emphasis on learning about pharmacology from mentors in the practice setting had reportedly not proved successful.

There was a lack of uniform opinion about what clinical or academic background was required for the best model of pharmacology teaching for nurses. The clinical physiologist who was the principal provider of pre-registration teaching felt that the current model worked well. The combination of specialist biology qualifications coupled with a clinical background allowed the contextualisation of scientific knowledge with students who were weak in this area. 'Scientists', *per se*, were seen to have difficulties in relating pharmacology teaching to clinical practice. National survey data revealed a lack of consensus regarding who should teach pharmacology. Pre-registration respondents tended to agree that a nursing background was necessary, whereas the attitudes of post-registration respondents were significantly different.

The multidisciplinary approach to teaching and learning in class and in practice, drawing particularly on the pharmacist when specialist knowledge was required was seen as a good model; experiences from clinical contact with patients enhancing their theoretical input.

'I would like to see the theoretical side of the module being taught by good clinical pharmacists, you know, that would suit me better than what we've got now, which is biology.' (L1ES1)

However, pharmacists considered that staffing implications prevented them from becoming involved in pre-registration teaching. Nurse lecturers were seen as capable of teaching the level of knowledge required for pre-registration students with the involvement of pharmacists at more specialist levels. Individual reservations about this related to lack of teaching experience and qualifications. Respondents to the national survey also expressed a preference for multidisciplinary teaching (NSD Box 4.5).

Likert item: <i>Ideally the person who teaches pharmacology to pre-registration nurses should have a background in nursing (Section 1 and 2 respondents)</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Pre-registration respondents (n = 88)	2.3%	20.5%	9.1%	30.7%	37.5%
Likert item: <i>Ideally the person who teaches pharmacology to post-registration nurses should have a background in nursing (Section 1 and 2 respondents)</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Post-registration respondents (n = 39)	2.6%	33.3%	25.6%	23.1%	15.4%
Further analysis via a Mann-Whitney U test revealed that these pre- and post-registration differences in agreement with this statement were significantly different ($Z = -2.8683, p = 0.0041$).					
Likert item: <i>Pharmacology should be taught by lecturers from more than one discipline</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Pre- and post-registration respondents (n = 126)	0.6%	15.5%	28.6%	45.3%	10.2%

NSD Box 4.5: Who should teach pharmacology?

4.18 Conceptual themes (II)

Three of the questions in Section 4.17 related to further conceptual themes (II) that emerged from the data analysis: content patient education and communication skills; integration; and organisation pharmacology. The themes were:

- the related importance of patient education and communication skills
- the opportunity for integration of pharmacology and patient education and communication skills.

4.18.1 Patient education and communication skills

Identifying the criteria for nurses' preparation in the principles of patient education and communication skills was also seen as necessary for the process of concept analysis. At this site it was thought that pharmacology knowledge needed to be communicated skilfully to patients and located in the generic principles of health education. Furthermore, it was considered that too little emphasis had been placed on how medication information was conveyed to patients, including the need to know how medication works. These generic principles were also seen to be applicable to other aspects of nursing; however, it was apparent in interviews and discussions that the pharmacological dimensions of nurses' preparation received by far the greater emphasis. Contrary to this, national survey data highlighted that the majority of respondents did not consider pharmacology knowledge to be more important than either communication skills or patient education (NSD Box 4.6).

Likert item: <i>Pharmacology knowledge is more important than knowledge about communication skills when it comes to educating patients, clients and carers about medication</i>					
(Section 1 and 2 respondents)	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Pre- and post-registration respondents (n = 125)	10.4%	69.6%	9.6%	9.6%	0.8%
Likert item: <i>Pharmacology knowledge is more important than knowledge about patient education when it comes to educating patients, clients and carers about medication</i>					
(Section 1 and 2 respondents)	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Pre- and post-registration respondents (n = 125)	5.6%	71.2%	11.2%	10.4%	1.6%

NSD Box 4.6: Communicating pharmacology knowledge

At Study Site 1, students were taught a great deal on communication skills in the first year, with mixed evaluation. The lack of clinical and practice experience had made some classroom-based sessions difficult to understand, there being no base on which to locate the health focus of the first year.

Principles of patient education were included in the pre-registration curriculum as a two-and-a-half hour session which formed part of a module on physical impairment in the third year. This was led by a lecturer-practitioner who was a specialist diabetes nurse. General principles of patient education were followed by group exercises that presented the challenge of considering learning from a patient perspective. A structured format, developed by the local health promotion unit was used to critique a patient information leaflet. In hypothetical and real examples from the lecturer's and students' practice, occasional links were made to medication education. Whilst references were used to support some of the principles advocated, the evidence base and links to the literature on concordance were not established. Nor did the latter appear to be covered elsewhere in the curriculum.

Students identified positive features of the session:

- that it had helped them understand teaching and its formalisation within the clinical context
- that there had been active involvement in the learning process.

However, a need for consolidation of principles through operationalisation in practice was identified. The demands of learning contract competencies, which did not focus on teaching about medication, and a general lack of time available to ask questions of their mentors on the ward, was seen to mitigate against this. Yet, by default, there was a reliance on consolidation occurring in clinical practice.

Students on the post-registration programme on care of the older person identified a number of dimensions of learning all related to the ability of older people to process information, as opposed to just telling them what they were taking:

CHAPTER 4

- ensuring that patients understood what medicines were in their cupboard at home
- the importance of writing things down without jargon
- taking patients away from the busy ward environment to explain things
- the importance of explaining more than once
- checking and re-checking understanding
- nurses' responsibility for beginning education during patients' stay rather than at discharge
- letting patients manage their own medication whilst in hospital
- going through with patients why they needed to take a medicine
- finding out how patients feel about their tablets.

These students had also internalised the philosophy and principles of concordance covered by the pharmacist, recognising the value of a more negotiated approach.

'... because they're not going to do something that they don't want to do ... just because people are elderly it doesn't mean that when they are on medications they need to know what it is for, not just because the doctor says you need it ... And the right to refuse them ... Yes, and the right to refuse them yes, definitely.' (S2ES1)

4.18.2 Integration of pharmacology and communication and patient education skills

Whilst students learnt about pharmacology and communication and patient education skills, there appeared to be little opportunity to integrate these discrete areas of knowledge. Solutions to this were seen to lie in:

- teaching the general skills of analysis and synthesis, linked to experiential learning through practice, followed by application to pharmacology and communication skills
- examination of different case study scenarios selected to illustrate principles.

However, variability in practice learning experiences through mentors, reinforced the fact that students might not have had any opportunities to practise the integration of the sub-components of medication education either in the clinical context or the classroom. National survey data contradicts this finding. Overall, a greater number of respondents reported that there were opportunities for integration (NSD Box 4.7).

Opportunities to integrate pharmacology knowledge with communication skills (% pre-registration Section 1 respondents)				Opportunities to integrate pharmacology knowledge with principles of patient education (% pre-registration Section 1 respondents)			
Course	Yes	No	N/A	Course	Yes	No	N/A
DipCFP	47.4	47.4	5.2	DipCFP	61.6	33.3	5.1
DipA	66.6	30.8	2.6	DipA	87.8	9.8	2.4
DipMH	60.6	33.3	6.1	DipMH	79.4	14.7	5.9
DgCFP	36.7	33.3	30	DgCFP	51.6	19.4	29.0
DgA	55.2	17.2	27.6	DgA	70.0	3.3	26.7
DgMH	29.6	14.8	55.6	DgMH	36.0	4.0	60.0

Opportunities for integration of pharmacology knowledge and patient education skills were greater in the branch than in the CFP. (DgCFP and DgA $\chi^2 = 28.11$, $p = 0.00001$, $df = 4$; DipCFP and DipMH $\chi^2 = 21.41$, $p = 0.00026$, $df = 4$; DipCFP and DipA $\chi^2 = 26.93$, $p = 0.00002$, $df = 4$)

NSD Box 4.7: Integrating pharmacology knowledge

4.19 Conceptual themes (III)

Finally, two further questions, teaching/learning mode, and context, related to further conceptual themes that emerged from the data analysis:

- preferred approaches to teaching and learning
- medication education or administration
- practice in context.

4.19.1 The approaches to teaching and learning

Approaches to teaching and learning ranged from large group lectures (approximately 150 students), smaller seminar groups of 15-20 students and individual tutorials. Seminars were the predominant format of practice-based modules; some involved students in practical activities such as simulation games or practising injection techniques. The institution was considered to have a good reputation for using reflection and experiential learning, which was seen as applicable to preparation for a medication education role, as was action learning:

'... so if they're practising teaching patients about self-medication they go away and analyse that and say, "what could I do better next time? What were the things that were good, that were not so good?" Those sorts of things, so I think that's something we do offer in a very positive way ...' (L2ES1)

However, it was apparent from discussions that learning in practice from drug charts, self-medication sheets, role models and mentors was related more to learning about drugs and drug administration than medication education. Findings from the national survey illustrate that a range of methods are used to teach pharmacology (NSD Box 4.8).

	Always utilised	Frequently utilised	Occasionally utilised	Never utilised
Lectures (n = 46)	26	20	—	—
Seminars (n = 43)	3	14	15	11
Case studies (n = 43)	1	15	17	10
Study guides/work books (n = 42)	8	11	16	7
Problem-based learning (n = 42)	6	12	13	11
Computer-assisted learning (n = 41)	2	1	14	24

NSD Box 4.8: Pharmacology teaching methods
(number of pre-registration Section 2 respondents)

At Study Site 1, teaching sessions were evaluated positively by students when:

- they had clear relevance and usefulness to practice
- they related to previous practice
- the teacher had clinical credibility
- teachers used participatory and interactive styles.

Conversely, sessions were poorly evaluated by students when:

- they lacked relevance to the students' clinical practice experiences actually undertaken
- the students had not undertaken the appropriate experience
- there was a lack of clarity in the links between theory and practice
- shared learning in the first two years was not relevant to future branch choices
- students had not worked with patients with a particular condition, e.g. diabetes, or myocardial infarction, a concomitant of variation in practice placements.

'There's a difference between having a medical, being able to grasp a medical issue, and having it related to what you're doing, and then it's much easier to take in and understand, and then relate to your practice, because you can see the links, we're all capable of it.' (S3ES1)

'Like elderly people shouldn't really be on more than four [tablets], for instance, now that was really interesting. That is something that is particularly relevant and we can take back with us.' (S4ES1)

'I find that style of teaching, I find I learn better in that style of teaching by being interactive rather than being talked at.' (S5ES1)

4.19.2 Medication education to medication administration

Whilst the focus of the project was to investigate nurses' preparation and practice in relation to iAction, the emphasis at Study Site 1 often shifted from medication education to medication administration and learning about medicines for purposes other than patient education. One lecturer was, however, explicit about the priorities:

'... to an extent, that ... [communication of knowledge] ... is secondary to the notion of correctly administering the medication safely. Technically under law, we don't have to tell the patient a thing — what they need to be able to do is to administer drugs safely and to have the knowledge base to be able to think critically.' (L6ES1)

In relation to knowledge and competencies expected at different levels of pre-registration education and the development of these within post-registration specialist practice, it was considered that what was required initially was sufficient knowledge about medication to enable its safe and accountable administration. The ability to recognise side-effects was also viewed as an early priority for second-year nurses, as well as the ability to give patients simple information on what their medication was for. Fourth-year students should be able to engage in more detailed medication education. A difference was identified between the comparatively straightforward knowledge needed to fulfil these functions and a deeper understanding of, for example, related physiology, and mechanisms of action. The latter was perceived to be the province of post-registration nurses who needed to develop specialist knowledge in order to deal with complex medication regimens in their practice areas. More complex knowledge and in-depth understanding were required in order to anticipate patients' prescription requirements and to recognise when prescribing was inappropriate. Liaison with other health care professionals required such a sound knowledge base.

'A nurse on cardiac recovery would argue, "Why are you giving an adrenaline as opposed to a noradrenaline?" or "Why are you giving a dopamine as opposed to an adrenaline?" or "Why are you giving dextrose as opposed to saline or as opposed to gelofusine?" ... those sorts of issues. Whereas a D-grade would accept those issues, someone who is specialised wouldn't just accept that issue, would argue back.' (L7ES1)

'... to a large extent you will be influencing the medical staff, particularly the very junior medical staff who won't have a clue what they're prescribing, so they tend to come to more experienced nurses and say, "What should I be writing?"' (L8ES1)

'If you're talking to consultants or registrars their knowledge might not be that up-to-date and you don't have the grounds, you think you might know, but you can't argue your point, whereas things like this are giving you that knowledge or starting point to say, "No, I don't think so." (S6ES1)

Nurses' medication education role was also perceived to be about the confidence and authority to liaise with pharmacists and doctors. When issues became more complex, nurses educating doctors and knowing to call in the pharmacist was part of the dynamic of the multidisciplinary team.

'I mean this [sessions on pharmacology observed] is in the sort of depth that there's no way you're going to reiterate it to a patient, but at least you know the reason why you're doing it [changing or stopping a medication] and perhaps feel more confident about doing it.' (S7ES1)

Interestingly, although patients were not thought to require the depth of knowledge acquired on post-registration programmes, a patient-driven need for specialised knowledge was sometimes considered necessary.

'You just move up a notch on certain aspects of using drugs and understanding and the communication again because you're talking to people who again know as much about their own particular problems as, or have much more of a need to know perhaps.' (L2ES1).

4.19.3 Practice in clinical context

In relation to practice in clinical context, given the reduced length of patient admission in adult acute wards, the consequent acuity of patients' conditions and the lack of a convalescence period in hospital, patients were considered too ill to assimilate medication education. Lecturer-practitioners, nurses and pharmacists also saw changes in medication regimens made either as a

'It's also time and having an established drug regimen as well in the acute area. They come in and their drug regimen can be changed dramatically, and yet once they're over that acute phase they're discharged and you don't have much time.' (ES1)

'The majority of it ... [education] ... comes as they're about to walk out the door with their TTOs and most of the time that's too late.' (Ph1A1)

Others disagreed, arguing that to stop it altogether would be too easy and that every opportunity should be taken when administering medicines to explain what they are. Suggestions for overcoming these problems focused on self-medication while in hospital or planned involvement of a carer in medication education from early in the admission.

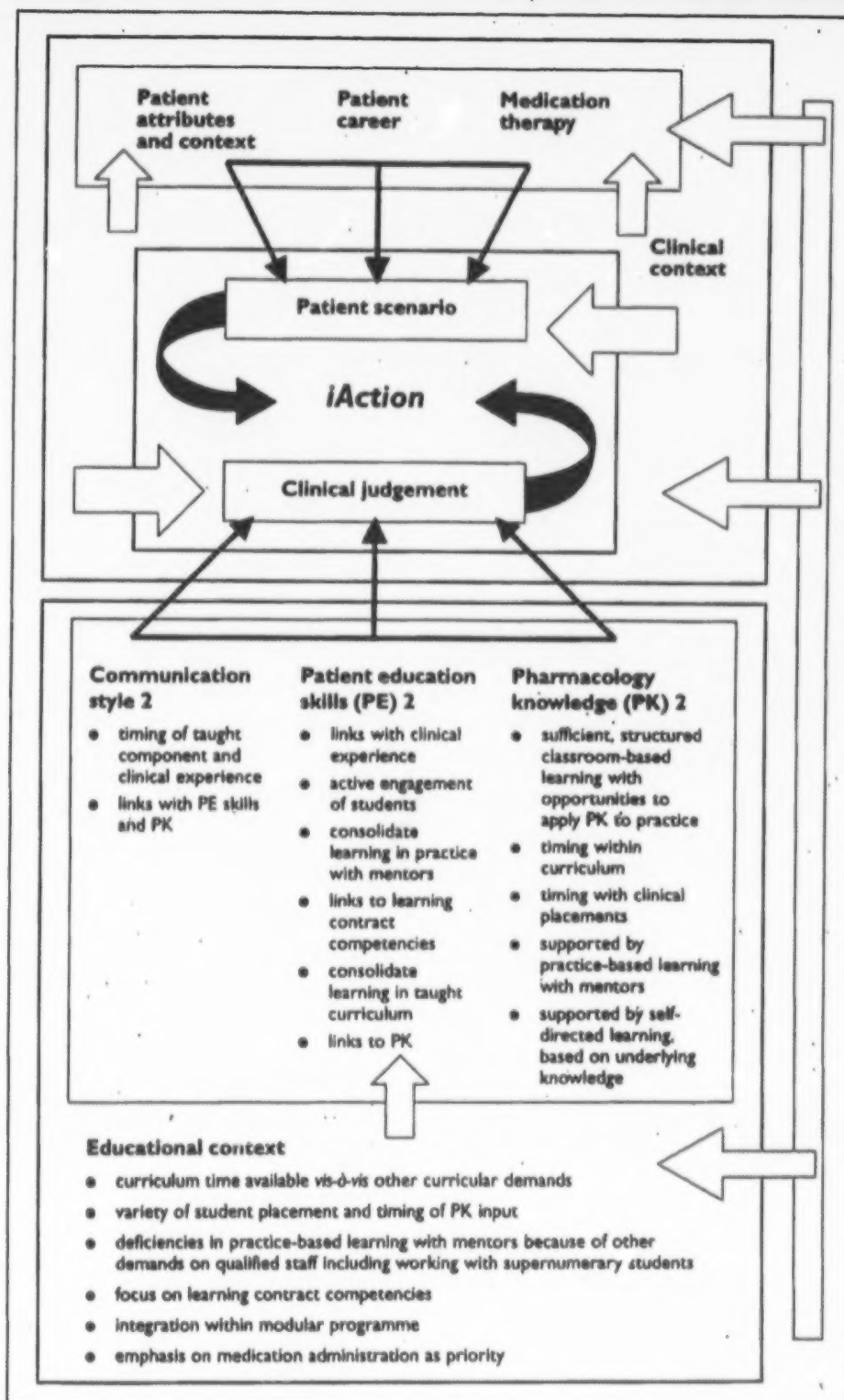
Focus group participants recognised that the notion of partnership and empowerment was an important dimension of the educative interaction, but was often considered difficult to put into practice. The disempowering nature of the hospital as an institution and patients' expectation and preferences were thought to contribute to such difficulties.

'I think also you have to get over the big obstacle for patients in that in the medical setting they will hardly ever question anything and yet if they say take their car to the garage, they'll want to know every single thing that is being done ... but you give them a whole stack of tablets and they don't question it, they just take them, and it's getting over that hurdle to say, "yes, you do need to ask, you do need to know what you're taking, why you're taking it, what to sort of look out for", so it's part of our education to give them almost the authority to question.' (L9ES1)

Whilst the curriculum included the concept of patient participation and the development of open-minded attitudes to empowerment and partnership, facilitating such concepts in practice was again thought difficult to achieve.

4.20 Conceptual framework and actual curriculum base levels for Study Site 1 Educational Institution

A number of themes related to the sub-components of *communication style*, *patient education skills* and *pharmacology knowledge* were identified at Study Site 1 Educational Institution (Figure 4.3). Whilst sub-components were included in the curriculum, deficiencies in relation to the potential contribution that they might have made to medication education were identified by lecturers, students and members of the research team. As a consequence, *actual curriculum base levels* for each of the sub-components at Study Site 1 Educational Institution are accorded a grading of '2', to indicate partial utilisation of the evidence available.



Level 1 Maximot: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Figure 4.3: Conceptual framework and actual curriculum base levels:
Study Site 1 Educational Institution

5.1 Introduction

This chapter shows how the parallel tracks of qualitative research and concept analysis were applied to the clinical areas and educational institution of Study Site 2. At this site the focus was on programmes related to mental health nursing. Again, NSD boxes are presented to complement the evaluation.

The central aim was to identify nurses' roles and contribution to patient education about medication within the context of Clinical Areas A and B. Clinical Area A provided community-based and day hospital services by a mental health team for clients with acute mental health crises. Clinical Area B was also community-based; a community mental health team (CMHT) provided care to clients with enduring mental health problems. Data collection was conducted by two members of the research team during September to November 1998 in Clinical Area A and October 1998 to January 1999 in Clinical Area B. Each researcher's presence was negotiated with relevant staff and opportunities were taken to maximise the likelihood of capturing data by:

- being present during a variety of shift times and different days of the week
- accompanying nurses on home visits
- attending clinics where depot injections were administered
- asking nurses to alert them at other times to interactions focusing on medication
- undertaking informal observation and discussion.

Data collection in these areas (Table 5.1) was considered complete when the researchers considered that data capture was saturated.

The researchers obtained clients' consent via their key workers (as agreed with the local research ethics committee). Consent was reviewed on an ongoing basis as recommended by Usher and Arthur (1998). However, audio-recording of interactions and client interviews were not always possible or appropriate because of the client's condition or mental state or refusal to be recorded although consenting to the researcher's presence. On such occasions the researcher sought the client's and nurse's consent to write detailed and where possible verbatim field notes. Here, observation was conducted at a distance from the nurse-client interaction to minimise intrusion. Also, in some instances, it was possible to seek clients' opinions during the course of the nurse-client interaction.

Activity	Clinical area	
	A	B
Audio-recorded nurse-client interactions	2	12
Non-audio-recorded nurse-client interactions	9	21
Audio-recorded nurse interviews	4	1
Non-audio-recorded nurse interviews	4	0
Audio-recorded client interviews	0	4
Non-audio-recorded client interviews	1	0
Staff-student teaching session	1	0
Non-participant observation of multidisciplinary team meetings	1	0
Non-participant observation of staff handovers about clients	8	0
Hours of informal non-participant observation, reflective discussion and field notes	47	60

Table 5.1: Study Site 2 Clinical Areas A and B: data collection summary

In Clinical Area A, it was also possible to obtain relevant information via the service's auditing processes. Daily staff activity records were recorded on computer, including the timing and type of interventions; one 'event focus' being 'medication'. Additionally, on discharge, clients were asked to complete a questionnaire about their satisfaction with the service. One question asked them to rate the information they received about medication.

Data collection at Clinical Area B primarily involved two nurses visiting clients at home. Accommodating to the organisation and nature of their practice, reflective discussion with the nurses was ongoing between visits to clients, rather than a formal post-interaction interview. Notes were made about the nurses' perceptions and evaluations of the iActions observed.

Following analysis of data from Clinical Area B, the emergent concepts and contextual influences were presented to the clinical team, who validated the themes and influences derived from the data, and provided additional insights into certain categories which have subsequently been incorporated into the report.

5.2 Clinical Area A

Clinical Area A provided a 24-hour alternative to acute mental health inpatient admission in a deprived inner-city area in the north of England. The service had been launched in March 1997 with Mental Health Challenge Fund monies. This extended a day hospital service with a focus on acute treatment as an alternative to inpatient care. Research findings have demonstrated that up to 40% of clients presenting for admission can be successfully treated in a day hospital and the costs are significantly less than inpatient care (Creed et al., 1990; 1997). The stated aims of the service were:

- a 24-hour alternative to in-patient care
- a flexible and responsive service
- treatment in own home or at the base
- an intensive package of care, up to three visits a day
- accessibility to clients and carers, with the base opening from 9am to 11pm seven days a week
- establishing and maintaining links with statutory and non-statutory agencies in the community.

There were 30 places for clients aged 16-65 years experiencing an episode of acute mental illness who would normally require inpatient admission. Exclusion criteria were:

- those likely to be at serious risk of injuring themselves or others
- those likely to abscond
- those who would not allow home access and would not attend the base
- those detained under the Mental Health Act
- those with a primary diagnosis of drug or alcohol abuse.

Clients were referred at any time over a 24-hour period by a psychiatrist. An assessment officer (allocated on a daily basis from the service team) screened the referral for suitability for admission and subsequently assessed the client. Once accepted into the service clients were allocated a key worker and co-worker (in key worker's absence) and treatment usually began immediately.

In aiming to be as flexible as possible, the service offered a choice of timing, location and type of treatment (Marshall and Harrison, 1998). The range of interventions included multidisciplinary assessments, psychosocial interventions, structured group or one-to-one activities (e.g. anxiety management), home visits, help with benefits and housing, respite from the home environment and all the normal diagnosis and medical interventions available on an inpatient unit. The initial focus of care was on engagement, reduction of symptoms and safety. Once these issues had been addressed, as far as practicable clients were assessed for continuing and long-term needs which enabled early referrals to be made to a range of community-based services which clients could continue to use after discharge. The period of contact with the service was based on individual needs, on average for about six weeks.

The service team comprised an H-grade nurse manager, two F-grade charge nurses, eight E-grade staff nurses, three B-grade support workers, one senior Grade I and two senior Grade II occupational therapists (OT), a Grade III OT technician and a full-time secretary. The team worked in two sub-teams linked to two consultant psychiatrists and a sector CMHT. The sub-teams met weekly to discuss clients' cases and plan future care. At any one time key workers might work with up to three clients. The OTs had the same key worker responsibilities as their nurse colleagues.

The service acted as a clinical placement for both OT and nurse students. Both diplomate and undergraduate mental health branch nursing students were allocated to the service. Students were allocated a mentor for their clinical placement and were visited periodically by university lecturers.

At present, in England, there are similar service delivery models for clients with acute mental health problems. With the changes in health service funding and organisation and the shortage of inpatient beds (Cumella et al., 1996; Marshall and Harrison, 1998) it was thought to be a model of care likely to increase in popularity. The service manager reported that there had been numerous requests to share their experiences with others developing similar models in other areas.

In the light of this, the research team felt that by focusing on this service model, an interesting perspective upon medication education for people with mental health problems would emerge for a number of reasons. It would provide an opportunity to observe medication education:

- in a client group with acute mental health needs and provide a comparison with clients with enduring mental health problems
- within a day hospital environment (the base) and within clients' homes
- with experienced mental health nurses, those who act as mentors to university students.

5.3 Clinical Area B

CHAPTER 5

Three teams were responsible for the provision of mental health care within the city. Clinical Area B was the geographical area covered by one team; there was a high deprivation index and a range of minority ethnic groups, with social problems related to unemployment, drug abuse and crime.

The team provided home care and support to clients with serious and enduring conditions such as schizophrenia or an associated state such as schizo-affective disorder, drug-induced psychosis, or affective psychosis. Whilst clients were in remission they were seen by the CMHT. In acute crises they were admitted to hospital or seen by the Clinical Area A team. Referrals were made by GPs, psychiatrists, voluntary and statutory agencies, as well as individuals and families. The team base also offered a variety of services including art and occupational therapy.

The nursing team was managed by an H-grade team leader, with two G-grade, four F-grade and one E-grade nurses. Four nurses were registered mental health nurses (RMN) and carried a caseload of approximately 55 clients. At any given time, approximately 10 clients might be high dependency. Others were seen briefly at depot clinics every few weeks. Three other nurses were designated case managers, with a caseload of approximately 15 high-dependency clients, who were seen between one and three times a week. Two consultant psychiatrists, a senior registrar and an OT were also part of the team.

The team provided educational experiences for a variety of health care professional students, including student nurses from Study Site 2 Educational Institution.

Table 5.2 lists the categorisation of iAction in both clinical areas. Additionally, the influence of the clinical context on the dimensions of these iActions was thematically analysed. The iActions of each Clinical Area are discussed below independently before comparison is made between the areas in relation to the components and their contribution to *patients scenario* and *clinical judgement* within the framework.

Area A	Area B
Monitoring medication outcomes and side-effects	Monitoring medication outcomes and side-effects
Negotiating medicine management with clients	Negotiating medicine management with clients
Medication administration	Medication administration
Liaison with psychiatrists	Liaison with professionals and other carers
Simple information giving	Teaching clients
	Evaluating adherence
	Working with clients' beliefs and motivations

Table 5.2: iAction in Study Site 2: Clinical Areas A and B

5.4 iAction in Clinical Area A

5.4.1 Monitoring medication outcomes and side-effects

Analysis of practice observation data illustrated that a major role of the nurse within the service concerned monitoring the client's condition, including the effects and side-effects of medication. Medication played a primary role in the stabilisation of many clients' conditions. Evidence for this was gathered from ongoing observation of service activities, including medication-related interactions, via client handover sessions and a team meeting attended. Of the 11 interactions observed, 10 included the monitoring role. This finding was corroborated

CHAPTER 5 by data derived from the computerised event recording system. Events recorded by nurses (as opposed to OTs and support workers) demonstrated that the most frequent reason for contact with clients was 'monitoring'.

Monitoring the client and discussion of medication was often part of multifocused interactions. A key worker nurse in interaction with a client, whom the team had had difficulty in stabilising, with consequent multiple changes to his medication regimen, demonstrated how a discussion to try to establish how the client was feeling quickly moved on to medication issues.

Nurse: *'So how's it going?'*

Client: *'I'm having a bad day this morning I'm running around like nobody's business'*

N: *'What happened? What medication did you have last night?'*

C: *'I know there's two yellow ones and a white one.'* (N1A2; C1A2)

The nurse continued to probe the client to ascertain how he was feeling with statements such as *'You don't feel as well as you did yesterday?'*, *'How is the restlessness?'* and *'You felt angry as well?'*. These prompts were interspersed with medication-related questions and statements such as *'Did you have something some medication then?'* and *'You don't seem sedated today'*. Restlessness was the side-effect of the client's medication and it was difficult for him to remain in one place or position for any length of time. The client was reminded about his medication including its name when he appeared to be unsure.

A further example of monitoring progress was observed during an exit discussion when a client was being discharged from the service. The key worker asked the client how he was feeling because his medication had been causing side-effects. The client reported that these were decreasing but his mood was the same. He wanted to continue to take the medication despite the side-effects because of its overall benefits. The key worker did not take the opportunity to incorporate medication education into the interaction.

The team meeting observed also highlighted this role: discussion of three clients included monitoring the effects (therapeutic or adverse) of medication. For one client, who was due to have her dose altered during the coming week, the doctors and the key worker considered increasing contact to monitor the effects of the new regimen.

5.4.2 Negotiating medicine management with clients

Negotiating with clients to take their medication was evidenced in observations of nurse-client interactions, a team meeting, a handover and a verbal report to the researcher.

One client had not been taking her prescribed medication and was in an agitated and depressed state during her visits to the base. The nurse used open questions to elicit from the client the reasons for this. During the discussion the client became less agitated and agreed with her key worker's suggestion to telephone her at home at medication times. Prompting medication taking via telephone calls would continue until the client's mood lifted and the voices decreased. The key worker would also try to find some activity to structure her days.

During an audio-recorded reflective interview this nurse stated that she structured most of her interactions around a transactional analysis framework in order to *'get hold of someone's preferred method of communication'*. In relation to this client she had been attempting to get her to assume the 'adult' rather than 'child' role. However, no specific medication education was incorporated into this interaction by detailing, for example, the effects the medication would have. Here, the client's immediate agitation had been relieved and an agreement reached about a strategy for dealing with the client's medication-taking behaviour.

Another client did not want to take his morning medication as it made him feel drowsy. In a brief conversation conducted in the corridor near the medication dispensing room, the nurse negotiated that he take half the dose in the morning and half at lunchtime to relieve drowsiness and maintain a level of the medication in his system. The client rejected this suggestion. A post-interaction discussion with the nurse revealed that the client had been waiting for a week for a review of the dosage which had been prescribed when he was less well. The informational aspect of this interaction was minimal but highlighted that a certain level of medication needed to be in his system to maintain some therapeutic effect. The nurse felt that his refusal was actually 'intelligent non-compliance' as his recovery now dictated a review of his medication.

Handovers also provided examples of other strategies nurses employed. A client was discussed whose condition was spiralling downwards because he had not taken his medication for two weeks. His key worker stated that they had tried various methods to encourage him to take his medication (not described). His condition was deteriorating to such an extent that they felt it necessary to inform him, as a last resort, 'we need to come and supervise you taking your tablets to prevent you from being detained under the Mental Health Act'.

Discussion at the MDT meeting surrounded a client who had been prescribed tranquillisers but was reluctant to take them. Her concern was that she would not wake up should her children need her. A number of strategies had been suggested including taking half instead of a whole tablet and obtaining help in the house with the children. These presented both a pharmacological and a social strategy to help cope with the potential side-effects of the medication. However, the client continued to refuse to take the medication. No further strategy or action was discussed with regards to this client's medication-taking during this meeting.

Interestingly, discussion with the nurses indicated that, on the whole, they did not experience many clients refusing their medication. During the researcher's visits it was estimated by one nurse that of the 25-30 clients in the service, three were non-adherent to their medication regimen. When reasons for this were explored it was suggested by nurses that the clients want to be admitted and on admission they agree to a set of rules and boundaries, one of which is that they take medication as prescribed. The difference between the ward environment and caring for people in their own homes and its possible effect on attitudes to treatment was also suggested:

'We do have very ill people we are managing in the community erm I think it all comes down perhaps to empowerment and respect and I don't know if you're in your own environment there's time maybe its different when you're in hospital they take it and don't think about it erm they feel less able to say well look I'm not sure about this ...' (N2A2)

5.4.3 Medication administration

Medication administration, including reminding and supervising, accounted for a high proportion of the event recording data. Clients who visited the base daily obtained their medication, in the morning and lunchtime, either from a medicine cabinet via their key or co-worker or from Dosett boxes. It was reported that administration offered opportunities to educate clients about their medication. However, during the period of data collection, education during medication administration was not witnessed. Telephoning clients to remind them about taking medication was also a common procedure, yet again little medication education took place.

Some information-giving about medication was witnessed during home visits. The client, who, following a suicide attempt, required tranquillisers, was informed of the name of the medicine (chlorpromazine), the dose (50mg) and that, in conjunction with the tranquilliser, she would be prescribed an antidepressant.

Evidence of communication about medication was witnessed during observation of doctor-nurse interactions in the staff room and the MDT meeting. Specific client-related issues, structured around their general progress, included discussions about dosage and the effect(s) that medication might be having (both therapeutic and adverse), the MDT meeting providing a more formal forum for in-depth discussions. The psychiatrists clearly relied on key workers' overall knowledge of clients to inform treatment decisions. In a discussion about a client who had had one of his medicines discontinued, the key worker explained that the medication was affecting the client's heart condition. The doctors present were unaware of this aspect of the client's case.

Other discussions concerned doses and potential side-effects caused by different levels of medication. During these discussions the implications for medication education were not discussed.

5.4.5 Simple Information-giving

Informing clients about medication regimens included:

- increases and reductions in doses
- changes to medications
- effects and side-effects of medication.

An interaction with a client diagnosed with hyper-manic illness included an explanation of the increase in dose of one medication (carbamazepine) because her mood was not stabilising effectively:

Nurse: *'The other thing I wanted to mention was about your carbamazepine ... Dr [name] ... would like to increase that'*

Client: *'What's that for?'*

N: *'That's a mood stabiliser the half tablet'*

C: *'What to calm me down?'*

N: *'It's just to help stabilise your ... level it off ... mm, how do you feel about that?'*

C: *'Well I'll try it'*

N: *'What it'll be is a whole tablet instead of half a tablet ... it's sort of doubling morning and night'*

C: *'Will it affect this seeing double?'*

N: *'It shouldn't do - its side-effects are quite low.'* (N3A2; C2A2)

In a post-interaction reflective interview the key worker reported how she had decided what to include when talking to the client:

'I think I thought about just keeping to the basics knowing that with ... [client] ... and stuff her comprehension and at the moment and her concentration I mean some people I'll sit down and go through leaflets but I thought it would be too much ... not overwhelm her with it all.' (N3A2)

This provides a further example of how interactions can have more than one focus. The primary aim of the discussion had been to inform the client of changes to her medication but also included by necessity, monitoring of side-effects and information regarding what can be expected from newly-prescribed medication.

A nurse visiting a client with reactive depression at home to administer two days of medication and to reiterate it was being changed from amitriptyline to paroxetine, provided an example of information-giving about changes in medication regimens. Although it became apparent during the interaction that the client had been informed of this change by one of the doctors during a home visit the day before, the nurse did not assess the client's prior knowledge of the medication, but simply informed the client of the name of the medicine, the dose (number of tablets) and when it should be taken. In response to whether she had any questions about the medication, the client shook her head. The post-observation reflective discussion with the nurse indicated that she felt that the client would take her tablets because her motivation was to get well. However, the plan was to monitor the client's general progress.

Other interactions observed included information-giving on the effect clients might expect from medication. During a visit to a post-partum Asian client and her husband, the nurse and psychiatrist, through an interpreter, explained the importance of recommencing amitriptyline. They informed her that the build-up of medication would take up to a week before having an effect on her mood.

In a post-observation reflective interview with this nurse she stated the importance of understanding medication in cases such as these:

'I think it's important to know about the medication, how it works, what the side-effects are and to educate the patient for ... for not only the effects but the side-effects ... you've said to them this drug will help lift your mood but it may take seven to 10 days to take effect ... because if they start to take a drug and after three or four days well it isn't working they need to know ... they need to take it consistently.' (N1A2)

Whilst this nurse referred to the importance of giving information about side-effects, during the period of data collection such information was only observed to be offered in response to clients' queries, rather than nurses proactively offering information.

5.5 The clinical context of Clinical Area A and nurses' iActions

Whilst not commenting directly on the context, clients' views on medication education episodes added to the understanding of how nurses mediated the impact of contextual factors and maintained the 'boundaries' of what counts as educating clients about medication. The extent to which nurses were able to engage in iActions about medication appeared to be influenced by a number of factors.

One such factor was the acuity of clients' illnesses. A client with unstabilised hypermania, referred to earlier in Section 5.4.5, was given 'basics' as she was experiencing hypermanic symptoms at the time of the interaction.

Clients admitted to Clinical Area A were in an acute care phase and as such may not have required detailed information about medication. Their immediate need was to take the medication as prescribed. When a client's condition was stabilising, ongoing assessment of their individual needs, in relation to the level of information about medication, was required. This point was highlighted in one of the nurse interviews:

'People that you're talking to, do have sometimes have problems with their thinking erm and it might be that they can't take on board the information because of some of their thought processes but in general their emotional state might actually override that and they still can't take the information on so then you've got to be aware of what the person's problem is and how you're going to address it erm because either way the information may not go across in the way that you intend ... I mean you might have somebody who's very depressed and so that they have difficulty

in retaining information and then you might have somebody who is about to have heart surgery who's so worried that they're going to die they're not going to be able to retain information either ... they have to be finely tuned to the patient's problem and make it patient-centred.' (N1A2)

Clients' expectations and preferences for information might have mediated the iActions observed. There was some evidence to suggest that such preferences were for limited information, linked to the acuity of their illness. On exit from the service clients were asked to complete a brief questionnaire about their admission which asked them to rate a number of different items, including: 'Do you feel that you received clear information about any medication you were taking?' Responses to this item indicated that the information the sample ($n = 97$) had received had generally been 'totally clear' (63.9%, or 'fairly clear' (25.8%). However, the questionnaire did not ask clients whether they felt they had enough or would like more information about their medication. The client interview that was conducted indicated satisfaction with low levels of information:

Researcher: 'Do you think the information you've been given about your drugs from the nurses has been useful?'

Client: 'Well yes they've only told me what they're for, calming me down you know ... yeah ... like the balancing act, stuck to the same ones all the time they've done me some good'

R: 'Would there have been any other information that would have been useful that wasn't given to you about your medication?'

C: 'No they just told me what it was for you know ...' (C3A2)

A further possible factor that might have influenced the iAction related to the extent to which discussions were spontaneous or pre-planned, the different interaction patterns moderating the iAction. Clients would be opportunistic regarding contact with key workers and conversations about medication would occur in corridors. In comparison, key workers visited clients at home specifically to discuss medication. However, in-depth discussion specifically involving medication education was not witnessed in any of the interactions observed.

5.6 The role of nurses in relation to other team members

Informal discussion with and periods of observation of the OTs and other team members indicated that their role regarding medication issues was similar to that of the nurse key workers. The OTs described their key worker role as one of a 'generic worker', not distinguishing it from that of nurses regarding clients and their medication. Support workers were also involved in the administration of medication. A qualified member of staff would dispense the medication to the support worker who would then take it to a client's home. The roles of the other team members, in this clinical context, raise questions and issues for discussion about the preparation and contribution of nurses for medication education:

- What are the implications for the preparation of health and social care practitioners in generic worker roles with regards to medication education?
- How do unqualified workers deal with issues that might arise from administering medication to clients?

5.7 Educational preparation and iAction: reflection and retrospectives

Interviews conducted with nurses ($n = 4$) sought perceptions about the skills and knowledge required to perform a medication education role. All four nurses highlighted the importance of communication skills:

'The first thing you need is good communication skills, I think that is more important than the knowledge of the drugs themselves although that is important but I think good communication skills because you have to be able to explain to the patient in their terms ... you've got to be able to move the communication skills to the patient, if the patient is highly intelligent and articulate then you have to use it on that level if not ... if they've lost some of their education through the illness process ... you have to bring your level of communication skills to a point that they can understand ... the most important is communication because you can know masses about medication but if you can't get that across in some way.' (N1A2)

Additionally, having an established relationship with the client was thought to be important:

'I think it's definitely having the knowledge [pharmacology] ... with [client name] I've got a rapport with her because I'm her key worker I think it's what to base it on I think ... I don't think with pharmacology I'm that hot erm but I have a fairly good working knowledge ... but it's having some rapport ... and maybe some trust.' (N3A2)

A trusting relationship was more important in the interaction than the level of pharmacology knowledge. If there were gaps in their pharmacology knowledge they would use each other and refer to other resources such as the BNF:

'If you don't remember all the ins and outs you have got the BNF to refer to and also I have a specific psychiatric nursing book ... you know I'll go and look it up if the side-effects I'm not sure of or I've not heard of or something they've been complaining of that could be due to the tablets I will then go and look it up ...' (N4A2)

However, it was recognised that a good knowledge base was required to communicate with others about prescriptions:

'I think you need a good base knowledge ... even if you don't have to explain that to patients ... nurses are becoming more in partnership with the multidisciplinary team' (N5A2)

Although there was recognition that programmes of education had informed them to a certain extent, when questioned about where they had acquired knowledge and skills, the most frequent response was in practice experience and from observation of others:

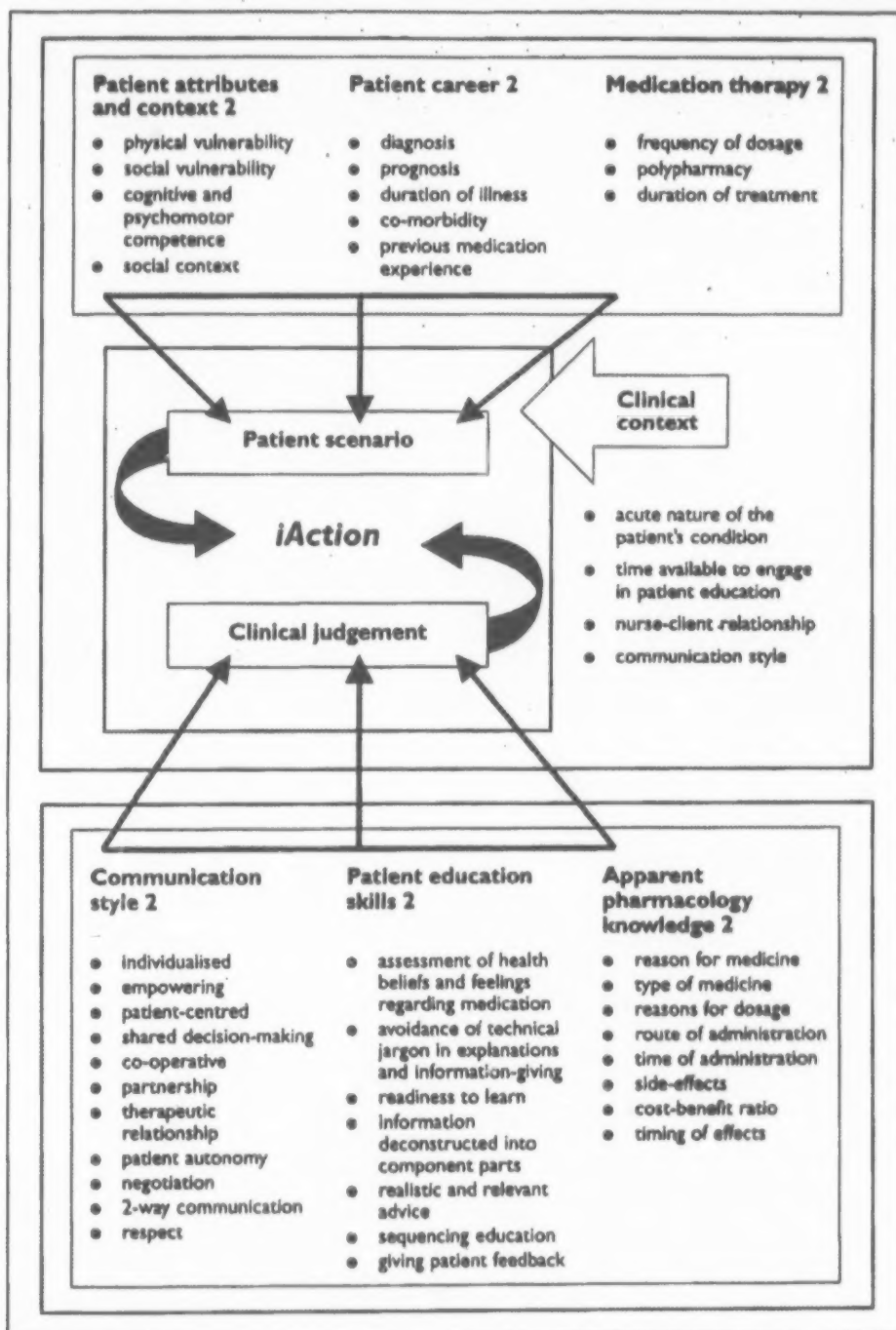
'I got from doing placements because when I did pharmacology a lot of it was just how the drug works and side-effects and when you're learning there's just so much that's thrown at you ... but I think it's just sort of being with other people, watching other people ...' (N3A2)

'I got a very basic level in my training and that was like an understanding of the medication and the effects and the side-effects ... it's been experience and other training' (N1A2)

During informal discussion, OTs commented on the advantage of an 'holistic' programme of education, whereby they did not specialise during their initial education but gained experience of various clinical specialisms via placements. This was felt to be advantageous in that there was opportunity to practise core skills in different circumstances and with different clients. Initial education covered some groups of medicines and there were also communication and interpersonal skills components. However, as with the nurses, OTs felt that they gathered most of their knowledge during clinical placements. All the OTs had completed further courses; one was also a psychosexual counsellor.

5.8 Conceptual framework and *actual practice base* levels for Clinical Area A

Nurses in Clinical Area A were engaged in a number of activities that could be characterised as iActions for medication education, including monitoring medication outcomes and side-effects, liaison with psychiatrists and simple information-giving to clients. They clearly played an important role in the continuous assessment of the therapeutic effects of medicines, often in the absence of client contact with other health care professionals. Nurses interviewed commented on the important contribution of communication skills to their medication education iActions, and emphasised the significance of the practice setting on their preparation and development of the role. A number of clinical contextual factors that served to either facilitate or impede nurses' medication education iActions are illustrated in Figure 5.1; the figure also outlines the contents of the sub-components which nurses drew on in their operationalisation of their iActions. Nurses were drawing partially on this list of contents some of the time. Thus, the *actual practice base* levels for Clinical Area A were graded '2'.



Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Figure 5.1: Conceptual framework and actual practice base levels: Study Site 2 Clinical Area A

5.9 iAction in Clinical Area B

iAction in this clinical area was categorised as follows:

- monitoring medication outcomes and side-effects
- negotiating medicine management with clients
- medication administration

- liaison with professionals and other carers
- teaching clients
- evaluating adherence
- working with clients' beliefs and motivations.

Features of the clinical context that impacted on the enactment of these roles were also thematically analysed.

5.9.1 Monitoring medication outcomes and side-effects

Nurses were observed to monitor the effects of medication on clients in almost every interaction observed in relation to residual or emerging psychotic or lesser symptoms. Such monitoring was required as a means of assessing adherence and to evaluate whether the most suitable medicine was being used. Monitoring occurred either:

- through explicit questioning of the client and/or carer
- through inference where questioning was not directly possible
- through the use of a highly structured approach to symptom identification
- through discussions with clients on strategies for managing symptoms.

Deliberate monitoring of the side-effects of medications was also almost universal to the interactions witnessed. The vast majority of clients seen during data collection reported a history of, and/or were currently experiencing side-effects. These ranged from the relatively minor (e.g. constipation, drowsiness and dry mouth) to more incapacitating effects such as impotence and Parkinsonian side-effects which included akathisia, dystonia and involuntary movements. In some cases, nurses were observed to use a structured approach to the assessment of side-effects by using tools such as the Liverpool University Neuroleptic Side-effect Rating Scale (LUNSERS) questionnaire (Day et al., 1995).

In addition to monitoring side-effects, nurses assessed their cause and took action by reducing the dose of medication or by recommending medication that countered the effects. Nurses also worked with clients identifying problematic medication interactions. This was particularly pertinent in view of the fact that many clients were taking more than one medicine, and/or engaged in recreational drug and alcohol use that interacted with prescribed medication(s).

The medication monitoring role of nurses also included assessment of clients' beliefs and attitudes to medicines; with some clients the Drug Attitude Inventory (Hogan et al., 1983) was used for this purpose. Knowledge was also monitored by asking clients about medicine names, functions and administration times.

5.9.2 Negotiating medicine management with clients

A negotiated approach to medicine-taking was observed in interactions with clients. There appeared to be a 'partnership', with clients' preferences and wishes sought by the nurse and acted on where possible and appropriate.

One client initiated a discussion about changing to one of the new atypical neuroleptic medications during a home visit. This was discussed at some length, with the nurse asking the client how he wished to manage the transfer, which medications he wished to discontinue and how this would be done. The nurse subsequently reported that a number of other changes had previously been successfully made to this client's medication regimen by means of negotiation.

Another client negotiated a reduction in Clopixol dosage due to side-effects – he informed the nurse that he was experiencing drowsiness during the day, and it was agreed to arrange for the dosage to be reduced immediately.

Such negotiation was also apparent in nurses working with clients to integrate medicine-taking within their own lifestyle. One client was experiencing drowsiness and consequently an adjustment to the time of administration of his tablets to nearer his bed time was negotiated. Here and above, negotiation contained an element of 'trade-off' in relation to the client continuing to take medication.

Other clients expressed concern about the possible long-term effects of medication, for example, the impact of lithium on the liver. In many instances, the nurse was observed to take these concerns seriously, and to arrange for liver function tests. In the meantime, the client continued to take his/her medication.

There was little evidence of any coercive actions. In only one instance during a home visit was a nurse observed to use such an approach. A client, who was reluctant to have his depot injection, was coerced under the perceived threat of relapse and re-hospitalisation. On a number of other occasions, nurses were observed to reason with the client that the quality of life and stability that they were currently enjoying was only as a consequence of adherence to medication.

5.9.3 Medication administration

The most apparent action was the administration of depot injections by nurses, both in clients' homes and in the depot clinic. This provided an opportunity for both relationship-building and medication education.

Supervision of self-administration of medication was also a feature of nurses' practice, and this involved teaching, monitoring and supporting this process with a view to increasing client independence. This process included monitoring clients when ordering and collecting repeat prescriptions, collecting prescriptions from pharmacy and remembering to take their tablets at the correct time.

5.9.4 Liaison with professionals and other carers

Liaison took place with both other health care professionals, principally psychiatrists as prescribers of medication, and relatives or carers. With psychiatrists, the liaison was for repeat or changed prescriptions. Communication also took place at MDT meetings where the nurse and/or client raised medication-related issues. In some instances, nurses also arranged for client contact with the psychiatrist to discuss a medication-related problem.

Liaison with carers focused on monitoring the effects and side-effects of medication, as well as on communicating about the practicalities of medicine-taking, such as how to obtain repeat prescriptions on behalf of the client.

5.9.5 Teaching clients

In several instances, nurses' actions consisted of offering information to clients about the pharmacology of medications. This was part of the process of facilitating effective medicine-taking.

One client's wife commented on the frequency of depot injections administered and the irritability experienced in the few days surrounding its administration. The nurse explained the pharmacokinetics of how the depot enters the body, is stored, released and metabolised. He further suggested, with reference to the client's likely high metabolic rate, that the medication was quickly metabolised, hence the requirement for more frequent injections.

Another client, who had been prescribed 'sleeping tablets' by her GP, requested an increase in dosage. The nurse was observed discussing the potential problems of dependence, rebound and tolerance in order to persuade the client that an increased dosage was not in her best interests.

Whilst teaching clients and carers was observed to form a feature of practice in Clinical Area B, a carers' focus group at this study site indicated dissatisfaction with the information received from health care professionals (CFG Box 5.1). Carers' difficulties in obtaining information from psychiatrists, and their uncertainty about who to contact and when, suggested that nurses should maximise their contact time with carers by providing relevant verbal and written information about medication and points of contact.

The group existed specifically for those caring for individuals with mental health problems. The focus group discussion took place in October 1998 during a routine carers' meeting, at which nine carers were present. A family support worker, voluntary service manager and a CMHN were also in attendance. All carers were actively involved in caring for members of their family with ongoing mental health problems; this included ensuring that medications were administered. All the carers had experienced contact with either voluntary workers and/or health care professionals about medication, including nurses in some instances.

- The important role of carers in ensuring that medications were taken was apparent. This ranged from supervision and reminders to encouragement to attend the depot clinic. Some carers spoke of the difficulty of mediating between doctor and client, particularly when medication had side-effects that rivalled or outweighed therapeutic effects. This was compounded by a feeling within the group that the 'contract' between psychiatrist and client made it difficult for carers to obtain information about the condition and medication, and as such they felt that they were kept in the dark.
- Information gaps, particularly about the side-effects, were also commented on. Carers reported that they were often unprepared for these, including those that were sensitive in nature, such as sexual dysfunction. They also felt that their perspectives and knowledge about the client's individualised situation were not taken into account – rather, any information tended to be medicine-centred rather than patient-centred.
- Carers appeared to have elicited advice about medications from various sources, especially voluntary support workers and written leaflets. The issue of who to contact for advice appeared to be important. Nurses were perceived as too busy and/or did not necessarily need to be in contact with clients after an acute episode of illness, while there was a reluctance to contact psychiatrists. Thus, carers were unsure who else they might contact.
- Timing of information about medicines was perceived to be crucial. Some carers felt that information needs emerged following an acute phase of illness, a new diagnosis or in an ongoing way if, for example, side-effects became apparent after a period of medication-taking. This was linked to the lack of an obvious point of contact with health care professionals whilst caring for the client in the community.
- Carers reported that they would find written information about medicines helpful to refer to.
- Some also commented on the importance of both consistency of information from different sources and the importance of continuity of care and advice giving.

CFG Box 5.1: Study Site 2: Summary of analysis of carers' focus group

5.9.6 Evaluating adherence

The complexity of some clients' medication regimens made adherence an important issue. In most cases nurses assessed adherence by asking clients whether and when they had taken their medication. Adherence was also assessed by monitoring symptoms, checking Dosett boxes and by discretely looking for discarded tablets.

Many clients had disease representations that were integrated with their delusional systems and influenced their medicine-taking. Thus, their beliefs about the nature of their illness and their medicines needed to be taken into account by the nurse when facilitating adherence to regimens.

One client with a diagnosis of schizophrenia believed it to be a central nervous system disorder with somatic hallucinations. The untwisting of nerves that he felt when meditating supported this theory. Conceptualising his illness in this way, as a physiological rather than a mental health problem, legitimised for him the taking of medicines. Where such beliefs facilitated medicine-taking, nurses worked with them. Alternatively, they attempted to modify them in the interests of adherence. The latter was observed when a nurse attempted to modify a client's belief that he was possessed by the devil, to that of 'he had a treatable illness'. The nurse-client interaction involved weighing up evidence for and against each version.

Other clients informed the researcher of their motivation for taking medication. This was often associated with a desire to prevent admission to hospital and remain in their own home. Other clients' motivations concerned their belief that the medication was improving their symptoms. Other techniques observed included motivational interviewing and cognitive-behavioural therapy.

5.10 The clinical context of Clinical Area B and nurses' iActions

Clients' views on medication education episodes added to the understanding of how nurses moderated the impact of contextual factors and maintained the boundaries of *what counts* as medication education.

The nurse-client relationship was critical in this clinical area. Relationships were characterised by trust, partnership and mutual respect. Nurses used a negotiated approach and social conversation to build such relationships. Clients reported that they valued the support, friendship, non-judgemental attitude and listening skills.

Fostering clients' self-esteem was also a central feature of interactions against which iActions were constructed. Nurses demonstrated the explicit 'giving of respect' on numerous occasions. Also, there were many examples of clients' current behaviour and recent achievements being reinforced, including those related to medication. Self-esteem was also enhanced through the use of the negotiated approach that facilitated clients' sense of control of medication-related decisions.

In an holistic approach to care, all aspects of a client's life were considered as potentially relevant and inter-related to their condition. Nurses addressed clients' financial problems, accommodation and educational needs and issues of sexuality. Such discussions were seen to be linked to clients' ability to take medication effectively and consistently. The extent to which nurses could establish relationships and provide holistic care was related to the continuity in the pattern of contact with clients.

However, Clinical Area B team members also perceived that such closeness was problematic. Such 'dependency' made for difficulties for clients when a key worker's leave or employment changes brought about a separation. The solution was seen to lie in co-working; clients were encouraged to develop a relationship with more than one nurse who could take over when necessary. But members of the team commented that both workload and staff shortages conspired to make this difficult in practice.

Within this clinical context, effective multidisciplinary working was also perceived to have a critical influence on the possible range of iActions. At a general level, clients' problems and personalities necessitated the use of a range of skills and techniques that crossed traditional

CHAPTER 5 discipline boundaries. With reference to medication, it was important that nurses and psychiatrists could liaise through good communication, easy access and a collaborative, non-hierarchical pattern of working. Within such a culture, alterations to medication negotiated with clients during home visits would have been quickly and easily transformed into prescription changes authorised by the psychiatrist, maintaining continued adherence to medication.

5.11 Educational preparation and iAction: reflection and retrospectives

Informal interviews were conducted with the nurses in Clinical Area B to illuminate the conceptual dimensions and boundaries of the iAction components, and to establish to what extent educational preparation had contributed to current medication education behaviour options.

The pre-registration diploma programme, which had been undertaken by a nurse at Study Site 2 Educational Institution, was felt to have provided an adequate pharmacology base, but with too little emphasis on pharmacokinetics and pharmacodynamics. Another nurse stated that he still felt insufficiently informed about these topics, even though he had been motivated to undertake short programmes to address this perceived gap.

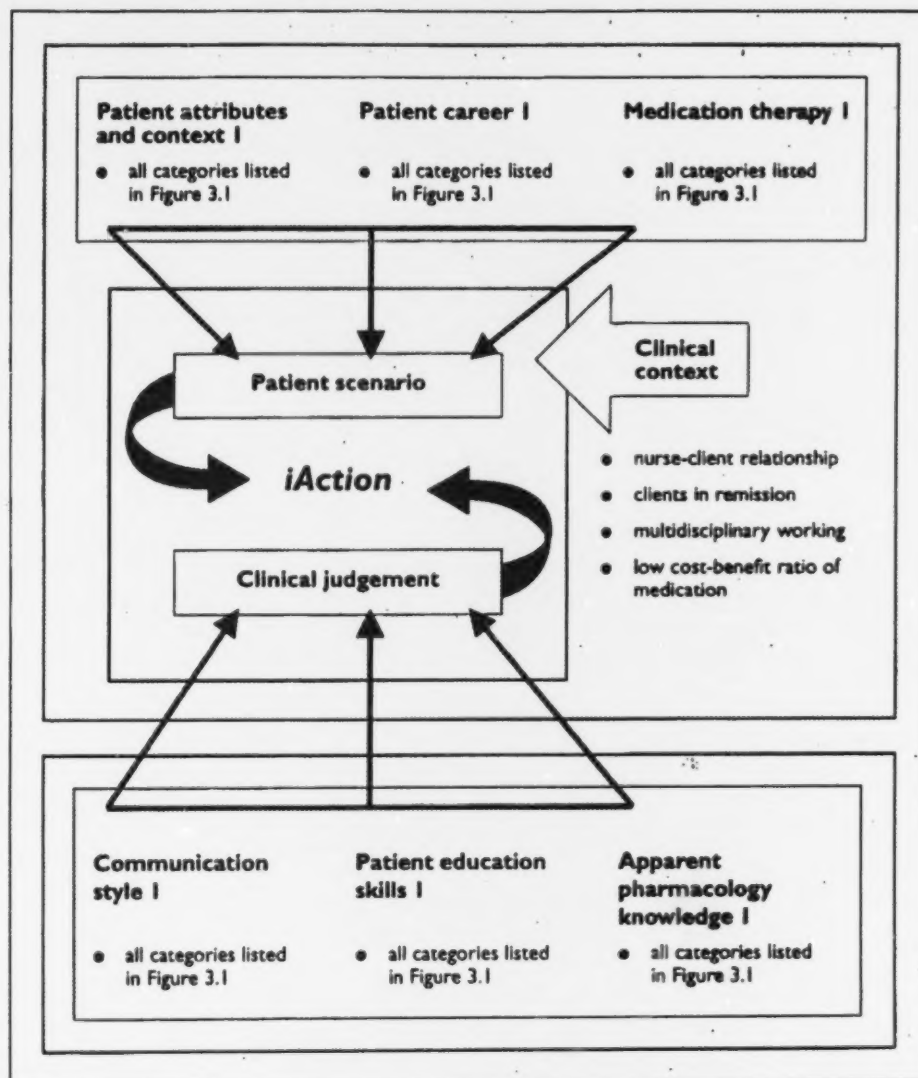
It was also felt that pharmacology needed to be introduced sufficiently early in pre-registration programmes given its importance in mental health nursing. Other issues that were considered important to prepare mental health nurses for their role in medication education were side-effects, monitoring, rating scales, compliance issues and motivational interviewing.

Communication was perceived to be fundamental to all aspects of the job, including medication. Here, emphasis was placed on understanding that giving clients more information was likely to result in greater adherence rather than less.

5.12 Conceptual framework and actual practice base levels for Clinical Area B

Findings from Clinical Area B illustrated that nurses in this setting were engaged in a comprehensive range of iActions relating to medication education with clients and carers. As in Clinical Area A, they were observed playing a key role in ongoing monitoring of medication in order to potentiate maximum therapeutic benefits for clients. Again, continuity of contact and development of the nurse-client relationship were important in a context where contact with other health or social care professionals was minimum or non-existent. Both working with clients' beliefs and motivations and teaching clients and carers were noted features of practice. Nurses interviewed commented on the centrality of communication skills to these and other aspects of mental health nurses' practice. The contextual factors facilitating such development of medication education are listed in Figure 5.2.

Nurses in Clinical Area B were considered to be drawing 'maximally' on a comprehensive range of the contents of the sub-components of medication education. Accordingly, *actual practice base* levels for all of the sub-components were graded '1'.



Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Figure 5.2: Conceptual framework and actual practice base levels:
Study Site 2 Clinical Area B

5.13 Study Site 2: Educational Institution

The focus of the educational institution for Study Site 2 was pre- and post-registration educational programmes for mental health nursing among adult care groups. The institution was a pre-1992 university in the north of England, and comprised a large school of nursing, midwifery and health visiting divided between two locations.

One location was primarily concerned with the diploma programmes in nursing with adult, children's and mental health branches. This former college of nursing was incorporated into the university in 1996.

The second location was within the main campus of this traditional university and the focus of pre-registration education was a degree programme with adult and mental health branches. On completion of this three-year programme, students had the option to undertake a one-year specialist practitioner programme.

Graduates also received the ENB 812 Nursing Care of Mentally Ill People in the Community certificate.

The second location also offered graduate and post-graduate programmes in psychosocial interventions for people with serious and enduring mental illness. A BSc programme came under the auspices of the school of nursing, midwifery and health visiting, and attracted nurses from throughout the region; an MSc programme was operated from the school of psychiatry, and attracted post-graduate students from a range of professions. Three local NHS trusts provided clinical placements for pre- and post-registration students.

5.14 Research activities at the Educational Institution

Research activities at the educational institution included a focus group, interviews with key personnel and non-participant observation of classroom sessions, followed by student interviews. Curriculum analysis of key documents pertaining to both the pre-registration and selected post-graduate programmes was also undertaken to identify philosophies, aims, objectives, curriculum organisation, teaching and learning strategies and learning outcomes.

Participants were selected for the focus group for their potential contribution to offering key insight into mental health nurses' preparation for their role in educating clients and carers about medication. Eight participants attended the focus group discussion in October 1998:

- lecturer, mental health and care of the older person nursing
- lecturer, mental health nursing
- lecturer, mental health nursing
- lecturer, mental health nursing
- clinical nurse specialist, serious mental illness
- charge nurse, psychiatric intensive care
- CMHN, community mental health team
- pharmacist, mental health hospital trust.

Individual interviews were also conducted with key personnel:

- lecturer, mental health branch (MHB), diploma-level programme
- lecturer and MHB co-ordinator, diploma-level programme
- lecturer, adult and MHB degree-level programme (teaching and assessing module)
- lecturer, adult and MHB degree-level programme (psychology)
- lecturer, MHB degree-level programme (communication skills and community)
- lecturer, MHB degree-level programme (communication skills)
- lecturer, MHB and branch co-ordinator, degree-level programme
- lecturer, adult and MHB degree-level programme (pharmacology).

Fourteen classroom-based sessions were observed. Five were within the diploma-level programme's MHB, seven in the degree MHB programme, and two within the MSc programme. Student interviews were conducted with second- and third-year diploma and degree students and with students in the first year of the MSc programme.

5.15 Pre-registration curriculum overview: diploma programme

The educational ideology, as articulated in the Curriculum Document and Student Guide emphasised the nurturing and development of student empowerment, self-knowledge, responsibility and motivation. The curriculum was humanistic, student-centred and androgogic. This was consistent with the stated mental health nursing ideology which emphasised the importance of patients' rights to respect, self-determinism and opportunities for growth. The stated role of the mental health nurse was to facilitate these principles and to provide advocacy, access to holistic and high-quality service provision. Curriculum documentation stated that mental health nurses should seek to provide health choices either by direct action or through educative-supportive interventions that enable individuals to help themselves.

The overall aim of the MHB was to produce reflective practitioners who are able to comprehend and respond to the diverse needs of clients whilst also understanding the concepts of personal accountability in respect of their role as a first-level registered nurse.

More specifically, the MHB aimed to enable students to:

- enhance their personal growth, use self as therapeutic agent and demonstrate a commitment to continuing their personal and professional development
- work as an informed practitioner, with the knowledge and skills needed to meet the needs of individuals and of groups in a variety of settings
- develop appropriate relationships with clients and their families in order to assess, plan, implement and evaluate interventions leading to resolution of mental health problems
- work in a client-centred manner which recognises and upholds the personal rights and confidentiality of the clients
- work effectively in a multidisciplinary environment managing and utilising available resources.

MHB curriculum documents also listed 16 learning outcomes which included the themes of: self-awareness; accountability for professional and educational development; critical evaluation; ethical and legal issues of care; health needs of the clients and their family or friends, and multidisciplinary working.

With respect to curriculum structure and organisation, the three-year diploma programme was modular and was currently divided into four nine-month segments focusing on foundation studies, developing practice, consolidation, and advancing practice.

Modules were located within these four parts, each with a number of themes that were developed throughout the three years in relation to, and in preparation for, clinical practice. Themes were described as 'long and thin', 'of variable length' and 'run in parallel within parts'. Within each theme there were aims and outcomes of three types listed: 'concept', 'process' and 'practice' outcomes.

Students were assessed in relation to each part of the programme. The student handbook stated that a broad assessment strategy had been adopted in order to offer students a range of means by which to demonstrate their strengths and weaknesses. Therefore, assessment strategies varied but included examinations, assignments such as care studies, and presentations. Students completed practice placements in blocks of a number of weeks at a time, interspersed with similar blocks of university education.

From the curriculum documentation it was difficult to map the programme or module structure in detail. However, the student handbook outlined the modules and their themes in more detail under the 'concept', 'process' and 'practice' outcomes. On analysis, the subject of pharmacology was not identified as a specified outcome for any of the themes. Similarly, no listing was identified which related to patient education.

There were two listings with regards to the administration of medication, one within a module on the principles of nursing theory and practice and the other within one on the application of theory to practice; both references were listed under the heading of practice outcomes.

The subject area of communication skills had more prominence within the curriculum:

- communication studies included factors affecting communication and the core conditions for therapeutic communication
- communication studies II included determining and utilising the concepts of partnership and empowerment and their application to positive health care
- communication studies III included critically appraising issues within the national information, management and technology strategy and the development of nursing practice
- communication studies IV included utilising therapeutic models to interpret therapeutic communication and evaluate factors that may impact on such communication.

The document stated that throughout the CFP students were encouraged to develop adult learning skills and should continue to accept responsibility for their own learning during their branch studies, with the emphasis on allowing students to organise learning in a way that is relevant to them, whilst keeping the curriculum in view.

Curriculum documentation stated that there were no favoured ways of presentation and that all appropriate teaching methods were used including workshops, lectures, conference days and paper presentations. It was also stated in this documentation that androgogic principles underpinned the acquisition of mental health nursing skills.

The diploma and degree programmes were taught by two different sets of lecturers, although there were sessions where individuals might be invited to teach on each other's programmes. Most of the nurse teachers had first degrees, some form of teaching qualification and a nursing background.

The diploma programme also utilised an approach whereby the student followed through a group of clients under the supervision of appropriately qualified staff. This necessitated building up a caseload of clients with a variety of mental health problems and being involved in the care of the client over an extended period. This was not normally possible in the time allowed for standard clinical placements. Students were supported in this activity by a preceptor who, it was stated, should be an experienced and suitably qualified first-level nurse. Details of the diploma teaching sessions observed are outlined in Table 5.3.

Module	Session title	Duration	Lecturer	Student group	Post-session interview
1. (Student-requested session)	Neuro-transmitters	2 hours	Lecturer (nursing)	Third-year	n = 3
2. (Placement theory)	Neuro-transmitters	2 hours	Lecturer (nursing)	Second-year	n = 2
3. (Placement theory)	Preparation for client caseloads	1.5 hours	Lecturer (nursing)	Second-year	
4. Nursing theory and practice in branch nursing	Suicide risk assessment	1.5 hours	Lecturer (nursing)	Second-year	
5. Nursing theory and practice in branch nursing	Neuroleptic therapy	3.5 hours	Lecturer (nursing)	Second-year	n = 6

Table 5.3: Study Site 2: diploma teaching sessions observed and student interviews

5.16 Pre-registration curriculum overview: degree programme

The curriculum document articulated statements of belief and value in relation to health, nursing and studenthood. Students were seen as adults and various principles were laid out, recognising the importance of:

- student participation in the learning process
- responsibility for their own learning
- recognition of students' previous experience
- flexibility of teaching methods
- the importance of students' perceived learning needs
- problem-oriented learning.

The role of the nurse was described as promoting health at primary, secondary and tertiary levels, helping people to make lifestyle choices and attending to health problems. Nursing was seen as an art and a science that draws on a wide range of disciplines and requires interpersonal, therapeutic and technical skills. A list of key nursing roles was given which included 'teacher', 'educator' and 'therapeutic care giver'.

The three-year programme was modular. A pharmacology module occupied two hours per week and extended over the second year of the programme. It comprised 27 lectures interspersed with four tutorials, four computer assisted learning (CAL) sessions and four study periods. Pharmacology was assessed by means of a one-hour multiple-choice question examination, which spanned the breadth of the curriculum, plus a half-hour short answer examination.

A communication skills module was sited at the beginning of the CFP and was essentially skills- rather than theory-based. It began with an examination of self-awareness and the use of self, then moved on to examine basic aspects of communication. The module was not formally assessed, but a formative assignment, which involved the production of a video, took place at the end of the module. The lecturers were clear that skills were assessed clinically. Further, they pointed out that the subject matter was important at the end of the year when students undertook an integrated nursing assignment.

This module was intended to lay the foundations for future learning. It was followed up by a counselling module in the third year. Students progressing to the fourth year then

CHAPTER 5 covered ethical, legal and professional issues relevant to medication education. Additionally, in the fourth year two half-day sessions on neuroleptics were offered.

Another subject that extended from the CFP into the MHB was psychology. This comprised 14 three-hour introductory sessions in the second year of the CFP when different perspectives to psychology were introduced and individual differences explored. This was followed by a further 14 sessions in the branch programme (year 3) which focused on health psychology. These sessions, delivered jointly to mental health and adult students, covered topics such as decision-making about health behaviour, social cognition models and 'compliance'.

All nursing and related subjects were taught by nursing lecturers, all of whom had first degrees in nursing; most were qualified to Masters level. All lecturers had a recognised teaching qualification. Lecturers who taught the subjects anatomy, physiology, pathology, pharmacology, psychology, social policy and sociology were from the departments within the medical school. These lecturers almost all had doctorates but few, if any, had teaching or nursing qualifications.

Much of the programme relied upon a traditional didactic pedagogic teaching approach, sometimes to multidisciplinary student groups. This was particularly so in the case of biological sciences. The pharmacology lecturer said she would like to do practicals but had no facilities.

A 'teaching and assessing' module had the potential to contribute to students' medication education role. This 12-week module comprised two-hour sessions, which were shared by mental health and adult branch students.

Clinical teaching on the degree programme differed from the diploma in that lecturers were attached to students rather than clinical areas. Each student was allocated a supervisor, and the clinical relationship developed over the duration of the programme. Details of the degree programme teaching sessions observed are outlined in Table 5.4.

Module	Session title	Duration	Lecturer	Student group	Post-session interview
6. Acute mental health	Physical treatments in psychiatry	1.5 hours	Lecturer (nursing)	Second-year	n = 4
7. Pharmacology	Adrenoreceptors I	2 hours	Pharmacologist 1	Second-year	
8. Pharmacology	CAL on: pharmacokinetics and pharmacodynamics	2 hours	Pharmacologist 2	Second-year	
9. Pharmacology	Pharmacology and the skin	1 hour	Pharmacologist 3	Second-year	
10. Pharmacology	Tutorial: MH pharmacology	1 hour	Pharmacologist 4	Second-year	n = 9
11. Teaching and assessing	Facilitating skills within different client groups	2 hours	Lecturer (nursing)	Second-year	n = 7
12. Teaching and assessing	Student presentations	2 hours	Lecturer (nursing)	Second-year	
13.	—	—	—	Third-year	n = 5

Table 5.4: Study Site 2: BSc teaching sessions observed and student interviews

5.17 Post-registration curriculum: BSc and MSc programmes

The university was the lead institution in this joint initiative which involved two other universities along with purchasers, users and providers of mental health services throughout the north of England. Selection criteria for entry to the programme were not simply based on academic qualifications, but upon ideological orientation to care and treatment, access to a suitable client base and the existence of a supportive manager. Two programmes were offered:

- a BSc foundation programme in the management of psychoses, which aimed to enable students to attain theoretical knowledge and clinical skills necessary to deliver psychosocial management of psychoses
- an MSc/post-graduate diploma in cognitive behaviour therapy, which aimed to enable mental health professionals to gain knowledge of theory, research methods and clinical practice necessary to deliver cognitive behaviour therapy interventions, and to play a major role in the organisation of service delivery.

The programme documentation gave a strong sense of aspiring to achieve innovations in practice.

The BSc was a one-year full-time programme involving attendance on one day per week together with a practice element, and comprised five compulsory modules.

An optional dissertation module involved the development of a service-based proposal for research, practice or education.

The MSc was a two-year programme based on a day-release format and was open to those with an appropriate honours degree.

The BSc programme leader was located within the nursing school and the MSc programme leader was located within the medical school. A team of four lecturers and an honorary lecturer ran the two programmes, managed by the MSc programme leader. Team members all had a strong background in practice and carried caseloads.

Frequent use was also made of outside lecturers: the honorary lecturer, a clinical nurse specialist, contributed to teaching, as did colleagues from associated trusts and university departments, all of whom were leaders in the field.

The composition of the student group was such that there was active recognition of prior knowledge and experience; all classroom activities were in some way participatory. Other sessions were built around audio-recorded patient interaction vignettes which students brought in for discussion and analysis.

Both programmes contained two full-day psychopharmacology workshops. Personal, interpersonal and group skills were emphasised as part of the fabric of the programme. Also, students had plenty of opportunities to apply theory to practice, and to do this alongside their theoretical learning.

Details of the post-registration sessions observed are outlined in Table 5.5.

Module	Session title	Duration	Lecturer	Student group	Post-session interview
14. Services for people with psychoses	Pharmacology of anxiety and depression	3 hours	Pharmacologist	Year 1	n = 3
15. Cognitive behavioural therapy for psychoses	Schizophrenia and the individual	3 hours	Pharmacologist	Year 1	

Table 5.5: Study Site 2: MSc teaching sessions observed and student interviews

5.18 Concept analysis and Education Study Site 2

Analysis highlighted a number of themes related to the questions curriculum designers must ask:

- how do educational episodes contribute to the quality of practice?
- how does the observed quality of practice relate to:
 - the theoretical knowledge included within the curriculum
 - how such theoretical knowledge is applied in the practice context?

The dimensions of these themes are discussed below with reference to diploma and degree programmes, together with the degree of consensus or conflicting opinion across and between data sources. The themes were:

- dissatisfaction with the taught pharmacology component of the curriculum
- the impact of 'teacher'
- the related importance of patient education and communication skills
- opportunity for integration of pharmacology and patient education and communication skills
- the ethics of medication education in mental health nursing.

5.18.1 Dissatisfaction with taught pharmacology and the impact of teacher

Dissatisfaction was expressed in relation to a number of dimensions of the curriculum. Firstly, students on both programmes identified that the timing of pharmacology teaching needed to be sufficiently early in the programme, and related to clinical placements. Diploma students reported that the sessions had been placed at the end of the programme when they would have been more useful earlier on:

'I share the same view with her you know the pharmacology input came at the latter end of the course whereas if we had started it right from CFP we would have understood more about the way that drugs act and the various types.' (S1ES2)

Students and lecturers on the degree programme also felt that the input had been later than they would have liked. In the current curriculum, MHB students undertook at least one clinical placement prior to their pharmacology module.

Focus group participants also felt that pharmacology knowledge was needed to underpin the therapeutic relationship with the client:

'I think the nursing students need contact with the client, they should have something about drugs because if they're actually going to sit down and

have an interaction with the client then they need to know what's going on, not just in that client's head, that's for the client to divulge, but they certainly need to know what's going on in the body to know what, you know, are they getting involved in this relationship because it can inhibit people giving themselves therapeutic relationships and if you've got no concept, as a student you've got no concept of drugs, then how can you sit and have a therapeutic interaction with the client when you don't know what's going on?' (L1ES2)

However, it was felt that pharmacology knowledge should be introduced incrementally rather than 'crammed' in before clinical placements:

'There are so many components to the nurse's role in the effective management of medication that it would be difficult to cram all those components into a pre-placement module and I think it's incremental and I think the knowledge builds up over time and it goes hand in hand with experience and it's to do with, you know.' (L2ES2)

The national survey provided data on when students were first taught pharmacology in relation to clinical placements. Two Likert items illustrated respondents' opinions (NSD Boxes 5.1 and 5.2).

Programme	Prior	Parallel	Post	Combination
Diploma (n = 44)	13.6	31.8	40.9	13.6
Degree (n = 23)	13	30.4	43.5	13

NSD Box 5.1: When students are first taught pharmacology in relation to clinical placements
(% of pre-registration Section 1 respondents)

Likert item: <i>Ideally, nursing students should be introduced to pharmacology prior to their first clinical placement</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre- and post-registration respondents (n = 126)	1.6%	25.4%	7.9%	50.8%	14.3%
Likert item: <i>The CFP is the most relevant place to introduce nursing students to pharmacology</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre-registration respondents (n = 88)	2.7%	18.9%	12.6%	51.4%	14.3%

NSD Box 5.2: When should pharmacology be introduced?

Diploma programme lecturers in the focus group also considered that students did not need knowledge about the actions of medicines in the CFP because they could still have asked clients how they felt about being on medication:

'No not necessarily no ... [knowing about the actions of medication] ... but certainly when they go to mental health in CFP they have to handle the study book and in that there is a guided study about medication and it's interesting the information in that particular booklet. Some students couldn't make sense of a particular study on drugs. Why drugs are used, so many uses of the drugs, why they're not used, side-effects, all of those sorts of issues ... It's more than that it's talking to patients, didn't you talk to patients about how they felt about the drugs they were on? Did they not ask you questions about it?' (L3ES2).

In addition to the timing of pharmacology input, students on the diploma programme considered that overall they had insufficient coverage of this component. This was also the view of the lecturer who was interviewed following two pharmacology-related sessions. This theme was also identified by end-of-programme student evaluations. The lecturer and students could think of only four sessions in the whole programme dedicated to pharmacology. They felt that this had been insufficient and did not feel confident about talking to patients about their medication. This appeared to be related to the nature of the curriculum. The prevailing educational ideology was one of humanism and androgogy in which teaching content was responsive to students' articulated needs rather than pre-planned according to knowledge needed for practice.

Degree students also had concerns about the delivery of the pharmacology module. Whilst some valued the depth and time devoted to it, others complained about the level at which the teaching was pitched. Students interviewed all felt that the content was biased in favour of the adult branch. Whilst students felt that they needed to know about medicines used to treat mental health conditions, the pharmacologist was clear that all students also needed to be taught and examined on general medicines.

The application of pharmacology knowledge to nursing practice was also an issue within this programme. Lectures observed by the research team were not tailored to nurses' needs. The mixed professional groups in pharmacologists' lectures were referred to as though all were medical students, and there was no appreciation of the nursing role. This finding related to responses to three Likert items included in the survey (NSD Box 5.3).

Likert item: <i>Pharmacologists who do not have a nursing background rarely integrate pharmacology theory with practice issues</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre- and post-registration respondents (n = 124)	2.4%	20.2%	37.1%	33.1%	7.3%
Likert item: <i>It does not matter if the person teaching pharmacology has not got a nursing background as long as there are opportunities in the curriculum for someone to relate pharmacology theory to nursing practice</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre- and post-registration respondents (n = 127)	4.7%	26%	15%	44.9%	9.4%
Likert item: <i>Pharmacologists pitch their teaching at the appropriate level for nursing students</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre-registration respondents (n = 85)	18.6%	28.8%	33.7%	17.5%	1.4%

NSD Box 5.3: Who should teach pharmacology?

There was evidence to suggest that little communication existed between the contributing medical school lecturers and those in the nursing school responsible for programme planning. This was raised by students, pharmacologists and nursing lecturers. A number stated that they had little awareness of the wider curriculum beyond the module they taught.

By comparison, students valued sessions in which there was opportunity to apply theoretical knowledge to practice. Branch-specific mental health seminars were highly valued. A number of CFP mental health placement study days were also provided by nursing lecturers, with a focus on issues such as depression and substance abuse. Whilst the depth of pharmacology in these sessions was limited, students remembered them vividly and found them helpful and timely in relation to their clinical experiences:

'It was just the fact that learning about it, we could see it. I mean we could talk to the staff about it on the wards. It just sort of reinforced what you learned.' (S2ES2)

They were also valued because medication was discussed in relation to illnesses and individual clients; students could 'apply them to people'. Additionally, these integrated sessions were conducted by nursing lecturers, who were seen to have more clinical credibility than pharmacologists.

A final issue in relation to the taught pharmacology component concerned assessments. Different views were expressed by students on the two programmes. Diploma students felt that if they had been formally examined on pharmacology, this would have 'pushed' them to focus

CHAPTER 5 more on the subject. However, the extent to which pharmacology was assessed appeared to be variable, as it formed part of an integrated assignment:

'I think, em, on one of the assignments, there was some part that you could include drugs, but I don't think we would have failed the assignment if we hadn't included that.' (S3ES2)

On the other hand, students on the degree programme, who were required to sit a formal examination, asserted that their study patterns were mainly directed towards this, and one group regarded the examination as *'merely a hoop to be jumped through'*. These students also felt that the exam was biased in favour of the adult branch. National survey data provided further information on the theoretical assessments used to test pharmacology knowledge in MHB programmes (NSD Box 5.4).

Programme	Not assessed	Assignment	Exam	Exam and assignment	Assignment and other	Other	N/A
Diploma (n = 29)	10	7	2	4	–	4	2
Degree (n = 19)	1	3	1	3	–	2	9

NSD Box 5.4: Methods used to assess pharmacology knowledge and skills in MHB programmes (number of pre-registration Section 1 respondents)

Additionally, whilst students stressed the importance of learning in practice, they pointed out that the assessment-of-practice documentation did not explicitly mention medication education. A degree lecturer confirmed that practice assessment was based on the nursing process, and that pharmacology might or might not form part of students' assessment. Survey respondents highlighted the importance of practice-based assessments of pharmacology (NSD Box 5.5).

Likert item: <i>Clinical/practice based competency assessments of pharmacology knowledge are less important than theoretically based assignments</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre-registration respondents (n = 85)	20%	69.9%	7.2%	1%	1.4%

NSD Box 5.5: Theory or practice based assessments?

Two different approaches to teaching and learning about pharmacology were in operation. It is apparent from student and lecturer evaluations that the relations between the structuring and depth of pharmacology content, the timing and opportunities to apply this to practice were in need of reconsideration.

5.18.2 Communication and patient education skills and their integration with pharmacology

The importance of communication and interpersonal skills, in relation to action for medication education, were emphasised by both educationalists and practitioners in the focus group. They were considered more important than pharmacology knowledge and patient education skills. One participant commented:

'I think it's really good that you know which neurotransmitter is firing but I think when you've got a client who is distressed then that is the key issue. It's what's going on in front of you, what is going on. Half the time, not which transmitter needs blocking and stuff like that, I think that's irrelevant ... so far as these sorts of issues are concerned in terms of preparing nurses for their role in medication education, interpersonal skills are the key, it's a key subject area.' (L2ES2)

Whilst communication and patient education skills were included in both curricula, there appeared to be little opportunity to practise integrating these with pharmacology in preparation for a medication education role. Diploma students reported favourably on the amount and usefulness of the communication skills sessions and stated that they had covered patient education in the health promotion 'thread'. However, they felt that the opportunity for a specific session on medication education had been missed.

Despite the apparent lack of opportunity for integration of these areas at Study Site 2, the majority of survey respondents considered that such integration was not difficult to achieve (NSD Box 5.6 and 5.7).

Likert item: <i>The integration of pharmacology and communication skills is difficult for lecturers to achieve</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre- and post-registration respondents (n = 128)	7.9%	62.7%	15.1%	13.5%	0.8%

NSD Box 5.6: Is integration of pharmacology and communication skills possible?

Likert item: <i>The integration of pharmacology and patient education skills is difficult for lecturers to achieve</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 pre- and post-registration respondents (n = 128)	5.5%	59.4%	18%	16.4%	0.8%

NSD Box 5.7: Is integration of pharmacology and patient education possible?

The degree students reported that the health promotion module in the CFP involved negotiated project work, but this did not necessarily focus on medication issues. The 'teaching and assessing' module also made no explicit reference to medication education. Lecturers commented that communication skills teaching was hampered by student groups of 20 and over, and a lack of suitable resources such as videos.

Additionally, learning in practice was reported to be variable. Whilst communication skills lecturers viewed the clinical supervisor's role as an important opportunity to teach and assess these skills in the practice setting, some students stated that supervisors had not discussed medication issues with them. Under half the students in one discussion group had personal

CHAPTER 5 experience of medication education under supervision, and the group unanimously concluded that this was dependent on the individual supervisor. A number reported negative medication-related clinical experiences in which they had been unprepared to deal with the situation presented. They would have appreciated specific preparation in dealing with difficult situations through, for example, role playing which dealt with clients who refuse to take their medication or who raise difficult issues. Nurses on the MSc programme also expressed a need for more scenarios and improvised role playing related to medication education.

Variability in mentor support for diploma students whilst in clinical placements was also a concern. Focus group participants suggested that the degree of support required was inhibited by the large number of students, coupled with low numbers of qualified staff and the consequent pressures on them:

'I think that what we're hearing of the theory, is that it's about the environment, the environment out there, it's chaotic in terms of client admission, so maybe there is a, a sense maybe of failing students and ultimately failing clients, that if you have what appears to be a chaotic kind of approach to the curriculum and you've actually got a chaotic clinical practice in which the clients are not gaining what they need or should have because of staffing levels and sickness etc. etc., then the student is going to be lost.' (LAES2)

The importance of practice-based learning was also highlighted by the MSc students interviewed. They felt that pre-registration education had not prepared them for a medication education role and that they had mainly learnt about pharmacology in clinical practice from pharmacists, the BNF and psychiatrists. They reported that they had developed interpersonal skills themselves through a process of trial and error and/or observation of role models. They valued the psychopharmacology sessions in their programme which they felt linked different issues necessary for a medication education role. They also commented positively on the university-trust collaboration on the programme, and its multidisciplinary element.

5.18.3 The ethics of medication education in mental health nursing

The final concern related to the importance of ethics in medication education within mental health nursing. There was a strong feeling from the educationalists that it was important for students to understand medication issues from the client's perspective:

'You could give them the ABC of oncology and neurobiology and you can give them some understanding of that, but it's the bigger picture of, usually about consent, usually about the right to know, the right not to take it, the right to know where it fits in to that overall treatment and care approach and to make an informed choice.' (L1ES2)

The importance of the ethics of medication education was considered particularly pertinent in relation to side-effects:

'... about the consequences of not taking it and about information and about side-effects you take and which ones you don't, you know what I mean? Do you tell people about neuroleptic malignant syndrome? Do you tell them about the minute chance they've got of a severe disability through tardive-dyskinesia? How far do you go? That's a big ethical question and I think those kind of things need talking about, people need to get to grips with those kind of ideas and for some opinion of it.' (LAES2)

5.19 Conceptual frameworks and *actual curriculum base* levels for Study Site 2 Educational Institution programmes

CHAPTER 5

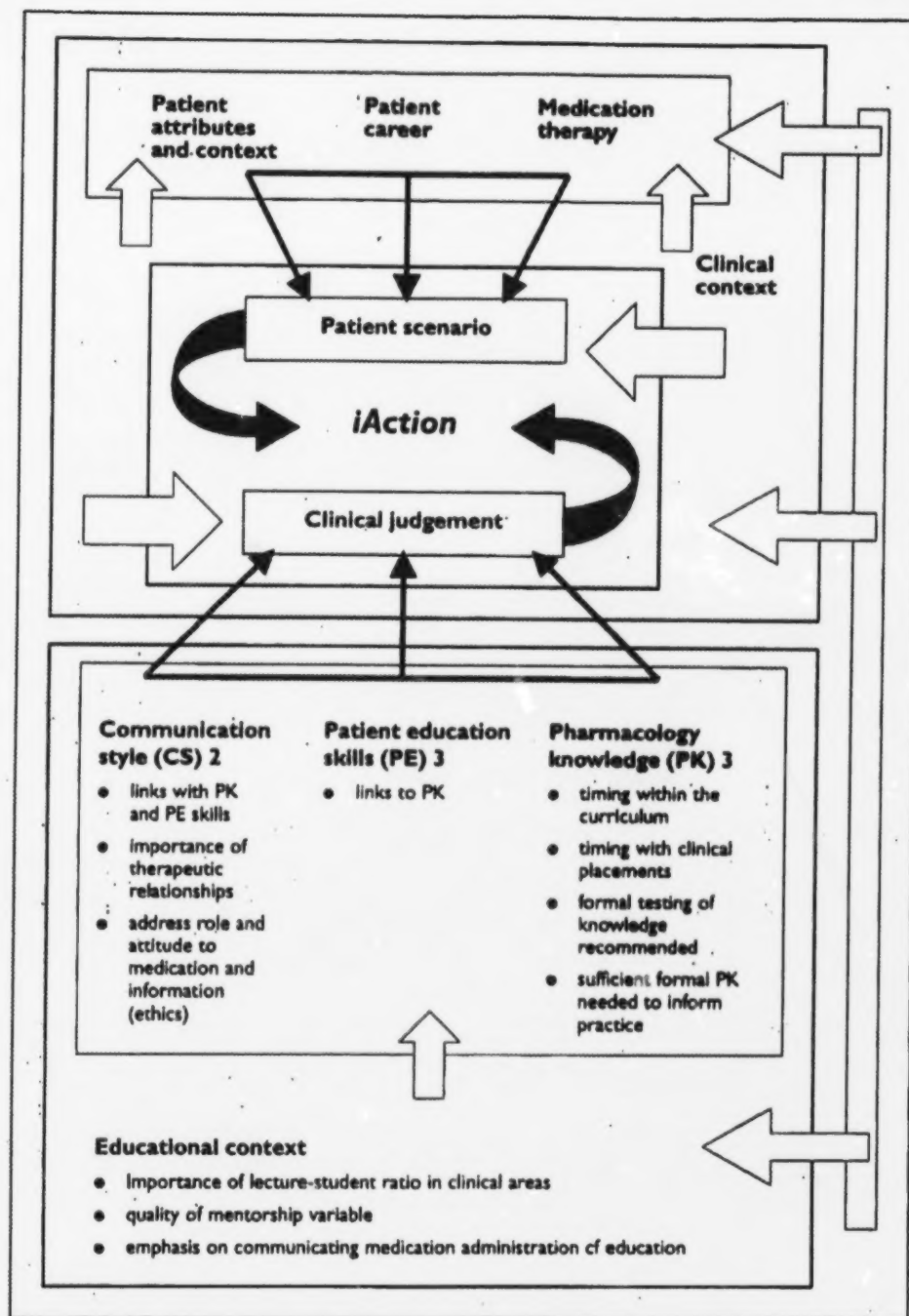
A number of evaluative themes pertaining to the sub-components of the concept of medication education were identified within the programmes offered at this site.

Issues emerging from the diploma programme concerned the need for sufficient formal pharmacology teaching and testing of this knowledge. The timing of such input in relation to clinical placements, as well as the importance of establishing links between pharmacology and patient education and communication skills also raised concerns. Both the quantity and timing needed to be addressed within a context of developing therapeutic nurse-client relationships and of raising awareness of ethical issues.

Key issues for the degree programme included the level and depth at which pharmacology should be taught as well as the importance of its application to mental health nursing practice, its timing in relation to clinical placements and of the need for a balance between taught and self-directed learning.

For both programmes, educational contextual factors were identified that influenced the preparation of nurses for their medication education role; the importance of the lecturer-student ratio and quality of mentorship experience were considered significant. The need for increased attention to medication education as an important nursing action was also raised.

In light of this 'partial' and 'minimal' utilisation of the contents of the *clinical judgement* sub-components, *actual curriculum base* levels were allocated to each programme to represent this state of development. The reconstructed conceptual frameworks (Figures 5.3 and 5.4) for Study Site 2 Educational Institution programmes are shown below.

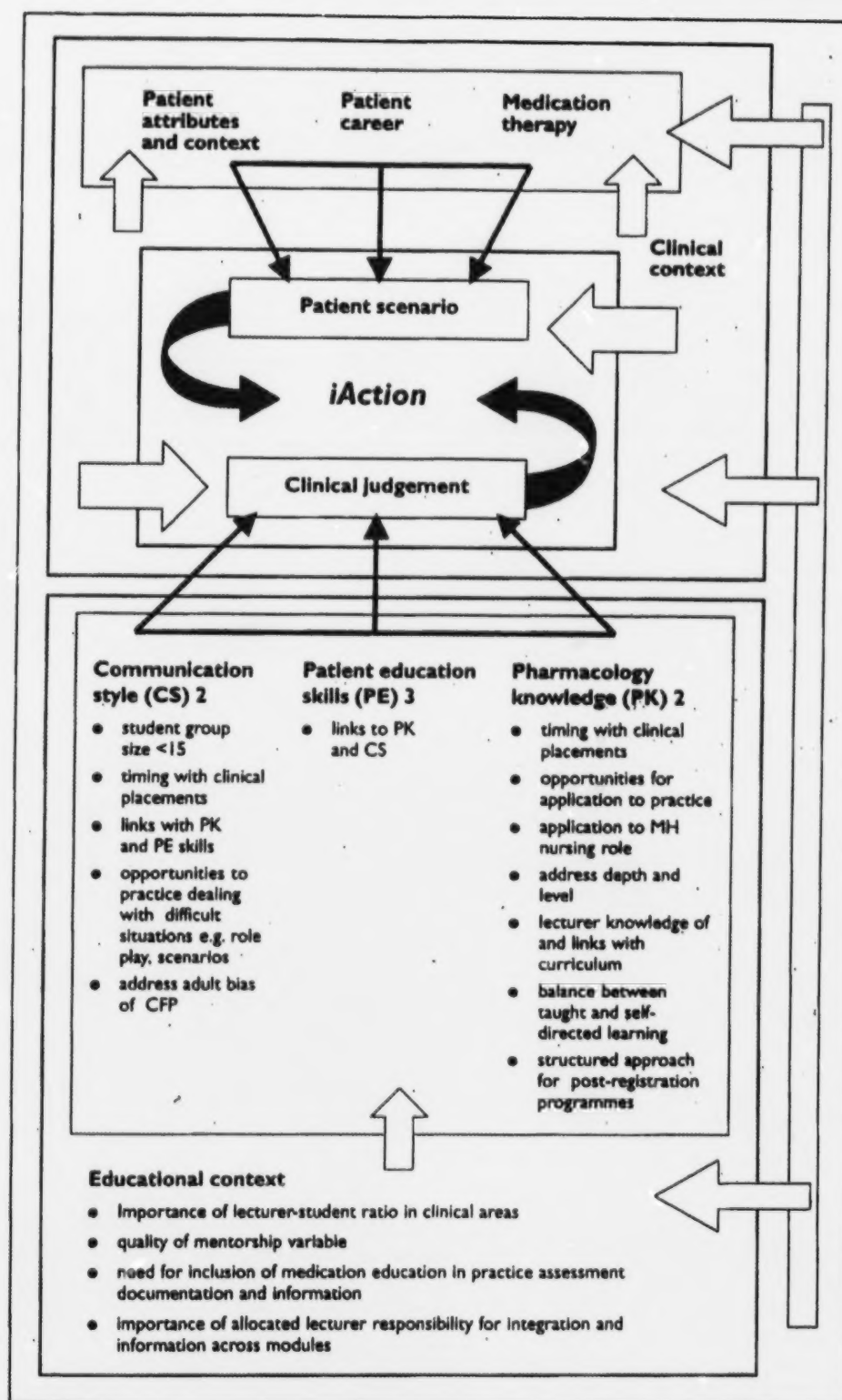


Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Figure 5.3: Conceptual framework and actual curriculum base levels for Study Site 2 Educational Institution/diploma programme



Level 1 Maximal: maximises use of potential evidence base (PEB)
 Level 2 Partial: partially uses PEB
 Level 3 Minimal: minimally uses PEB

Figure 5.4: Conceptual framework and actual curriculum base levels for Study Site 2 Educational Institution/degree programme

6.1 Introduction

This chapter shows how the parallel tracks of qualitative research and concept analysis were applied to the clinical areas and education institution of Study Site 3 to evaluate the construct of iAction for medication education. At this site the focus was on programmes related to post-registration specialist pathways in general practice nursing (GPN) and community nursing in the home (CN).

The central aim of data collection was to identify nurses' roles and contribution to patient education about medication within the context of Clinical Areas A, B and C. A summary of data collection activities is given in Table 6.1.

Clinical area	Practitioner	Activity	Patient Interactions audio-recorded	Patient Interactions observed only	Patients interviewed	Practitioner interview
A	1 GPN	Diabetes clinic	Patients 1-5	—	1-5	Yes
B	2 CN	Home visits	Patients 6-9	—	6-9	Yes
	3 CN Assistant	Home visits	—	Patients 10-13	10-13	Yes
	4 CN	—	—	—	—	Yes
C	5 GPN	Clinic	Patient 15	Patients 14, 16-19	15, 16, 18	Yes
	6 GPN	Clinic	—	Patient 20	—	Yes
	7 GP	—	—	—	—	Yes

Table 6.1: Study Site 3 Clinical Areas A, B and C: data collection summary

At this site it was necessary to adapt the research methods in relation to each data collection context. The two factors that contributed to the modification of method related to the characteristics of the patients and the nature of the nurses' activities. The limited use of the English language of some patients precluded interviewing them following observation of the nurse-patient interaction. Also, nurses' busy timetables during community visits required obtaining patient perspectives during, rather than after the nurse-patient interaction.

6.2 Clinical Area A

In Clinical Area A, the practitioner was a GPN, practice manager and specialist practice teacher (SPT) for GPN students on the specialist practitioner pathway at the educational institution at Study Site 3. Nurse 1 had been qualified for over 20 years and had undertaken SPT preparation at the same institution. She, herself, had not undertaken the specialist practitioner pathway. Nurse 1 was based at a GP surgery within the boundaries of a community NHS trust local to the educational institution. Nurse 1 was also a focus group participant. Two members of the research team collected data from interactions with patients attending a diabetic clinic.

In Clinical Area B, Nurses 2 and 4 were CNs based at a health centre within a local community NHS trust. Both had undertaken their initial pre-registration training approximately 20 years ago. Two different members of the project team collected data on nurse interactions with patients during home visits on two separate occasions. The third practitioner (CHA1) was a CN health care assistant.

6.4 Clinical Area C

In Clinical Area C, Nurse 5 was a GPN currently undertaking the SPT preparation course at the educational institution at Study Site 3. She completed her initial pre-registration education approximately 15 years ago and had subsequently qualified as a midwife, before taking a career break and returning to practice as a GPN. She did not have a specialist practitioner qualification, but had undertaken an asthma course. Practitioner 5 was also a focus group participant; she reviewed a preliminary analysis of findings from the focus group and commented on transcripts of her interactions with a patient recorded during the clinic session. Nurse 6 was a GPN with no specialist qualifications who had completed her pre-registration education some 15 years ago. Nurses 5 and 6 were based at the same GP surgery. Data were collected during one morning (Nurse 5) and one afternoon clinic session (Nurses 5 and 6). An interview with the GP (GP1) who acts as the 'prescribing lead' for the practice was also conducted.

6.5 iAction in Clinical Areas A, B and C

iAction in these clinical areas was categorised as follows:

- monitoring patient prescriptions
- checking adherence
- information-giving about medicines.

Here, data from GPN and CN clinical areas have been combined as the iActions identified were found to be common to both specialisms. Area-specific iActions, or those pertinent to only one specialism, are highlighted.

6.5.1 Monitoring patient prescriptions

Both CNs and GPNs were observed to utilise contact with patients as a means of monitoring the effectiveness of prescribed medicines. As necessary, opportunities were also taken to initiate changes to prescriptions, through direct liaison with, or by patient referral to, the GP. This occurred in the context of both clinic interactions and home visits where medication was the main reason for the contact, for example, CNs filling up Dosett boxes and where medication was part of a more general contact, for example, diabetic patients attending a GPN clinic for vision, blood sugar and pressure checks. Monitoring was undertaken in conjunction with assessing the patient's condition. For example, in the case of a CN:

'What about the waterworks ... [name] ...? Is that any better since they've reduced your tablets? Do you think you need some painkillers ... [name] ... for your knees? ... I'll have a word with Dr ... [name] ... yeah? With ... [name] ... about your knees, because I know you said last week they were a bit sore.' (N2S3)

With the GPN, objective assessment measures, such as blood sugar and pressure, were also used to assess the patient's condition in conjunction with prescription monitoring. This occurred not only in relation to diabetic patients, but also in relation to hypertension checks and patients with asthma. Nurses were observed assessing the therapeutic effects of prescribed medicines, as well as to check for side-effects. For example, after Nurse 1 had recorded a patient's blood pressure she commented:

'... It's slightly lower, so it looks as if 5mg is controlling it. Have you had any problems with dizziness or anything? Are you taking them at night? ... Good. So you haven't felt dizzy in the morning?' (N1S3)

In some instances, where abnormal measurements were detected or patients reported adverse side-effects, referral to the GP was suggested. Following a high blood pressure recording on one diabetic patient, Nurse 1 suggested referral to the GP if the next reading was also high. One patient of Nurse 5 attending for a Depo-Provera contraceptive injection reported long-lasting amenorrhoea. The GPN reported this to the GP and a subsequent referral for a bone scan to clarify the possibility of oestrogen depletion was made.

6.5.2 Checking adherence

Both GPNs and CNs were observed carrying out checks on patients' adherence to their current medication regimens.

Nurse: *'Is ... [name of carer] ... giving you the lactulose?'*

Patient: *'Can't think.'*

N: *'You can't remember can you? You know this little bottle with the liquid in? That's for your bowels, does ... [name of carer] ... give that to you of a morning?'*

P: *'No, although there's an empty bottle there so I must have had it.'*

N: *'Right, OK. But your bowels are actually all right at the moment.'*
(N2S3)

A similar example was observed between Nurse 1 and a diabetic patient attending the clinic:

'And you're taking a half a tablet? Twice a day, morning and evening ... And that seems to be just right at the moment, so that's good.' (N1S3)

As the above quotes indicate, by this simple questioning, monitoring of adherence was undertaken in conjunction with assessing the patient's condition.

6.5.3 Information-giving about medicines

The extent to which nurses contributed to patient education about medication was limited to simple information-giving about medicines; the name, its purpose, the dosage (numbers of tablets to be taken) and times of administration. For example, in the case of Nurses 5 and 6, information about the purpose of asthma inhalers and the times at which they should be administered was offered to one patient, the spacing of doses of antimalarial tablets, polio vaccine and yellow fever vaccine to two others attending for foreign travel advice. A further example:

'Yes, but that's ... [blood pressure tablet] ... not just for the urine that's actually for blood pressure ... This tablet you have is for blood pressure too ... OK? I know that you think it's for urine because it makes you ... [wee] ... maybe ... but it's for blood pressure, and because blood fat is high, we want that to come down like your blood pressure, so that's why doctor gave you the tablets. But I will talk to Dr ... [name] ... OK?' (N1S3)

Often this simple information appeared to the observer to be linked to an assessment of the patient's capacity and preference. The nurses themselves in a subsequent discussion with one of the researchers also confirmed this. For example, with a patient of Greek origin the information offered was limited, as there was no shared language. When interviewed afterwards, the GPN considered that she had 'gone as far as she could' with the patient, because she did not speak English, did not like interpreters and preferred to come with her son for translation.

Many patients whose perspectives were sought also appeared satisfied with the relatively simple information they had about their medicines. Knowing the names of the tablets, their purpose, dosage and timing appeared to be sufficient. For example, one patient had requested knowledge from the pharmacist:

'I said to him, look come here, would you come and sit down and explain to me what they are, and put it down how many I'm going to take a day, and tell me what for they are ... one of them is senna, for my bowels, twice a day. The other one is for the water, to take it two a day, for going to the toilet. The other one is what for they are? For the pain, and I take it three times a day.' (P1S3)

When asked, this patient did not identify a need for any further or more detailed information about her medicines. The extent to which relatively simple information enabled medicine-taking was also illustrated by another patient who was self-medicating, but had recently changed from a Dosett box filled by a nurse. Asked about the knowledge required to make this shift, she reflected:

'So I now, I know what to take, and I know by the colour what's what, and checking up on the name ... if it's simple enough for me to pronounce or remember ... not all of them, some of them I know, I've been on tablets for years, eight years.' (P2S3)

Whilst for some patients it was considered an appropriate iAction for them to receive a low level of information, observation and patient interviews also revealed that in some instances further information could have been offered. For example, during an observed consultation about foreign travel immunisations, Nurse 6 gave brief information only about dosage times and spacing of the vaccines and tablets. The patient was left to elicit information about any side-effects of the tetanus and polio vaccine given. Two other patients interviewed following interactions with Nurse 5 were also unclear about the side-effects of a depot contraceptive and depot neuroleptic respectively. The latter patient expressed concerns about sexuality and impotence in an interview and was unclear whether this was a consequence of his current medication. A patient attending for a contraception injection expressed a desire to know more about this:

'I mean, if it does have any side-effects, if you know about it, you can keep an eye out and you can relay it, go to the doctor ... the way I feel the more information you get on it the better.' (P3S3)

In both cases, the patient during the observed interaction did not request information on these issues. In a number of other instances, the researcher's impression was that there was potential for offering further information about medication, even where patients did not solicit this. The relation to adherence was not clear. In the case of depot injections, the only 'adherence behaviour' required by the patient was to attend appointments for repeat administration. However, further information may have enhanced patient knowledge and control, with subsequent self-management of medication-related problems.

The influence of health beliefs on information-giving was also noted in the interactions and interviews. For example, the patient of Greek origin above had, in addition to her language problems with English, a history of being reluctant to take tablets. Other patients interviewed after visits by CHA 1 also had strong health beliefs about medicine and its potentially poisonous effect on the body. For instance, one patient informed the researcher:

'The other one ... [nurse] ... tell me to take two, two to three times a day, and I take one a day and I feel just the same, because my body is damaged, just the same as if tablets or harm to it or anything, my body is shaking all over ... and I cut them off, I kept only the night time.' (P1S3)

The extent to which patient health beliefs influenced nurses' interactions and patients' management of their condition was also apparent in an elderly diabetic patient seen by Nurse 1. He appeared to have constructed a set of beliefs about potential complications of his diabetes that made referral for kidney screening a near impossibility.

Nurse: *'Have you thought any more about having any blood taken?'*

Patient: *'I'm not having my blood taken ... you said about the liver and kidneys ... they're perfect ...'*

N: *'We don't actually know they're perfect ...'*

P: *'Well I feel perfect, I'm sorry, I feel wonderful ... if I find anything wrong, if I felt for one moment ... I don't want to go to hospital unless I have to go and that's it.'*

N: *'It's something that we might be able to prevent.'*

P: *'Yes, but we don't know it's there.'*

N: *'We don't know it's there, so we should find out.'*

P: *'Look, I don't know how much longer I've got to live, and I certainly don't want to go fiddling about.'* (N1; P4S3)

Whilst this section of the interaction was not specifically about medication, it does illustrate the influence of health beliefs on information-giving and assimilation. The importance of assessing health beliefs as a determinant of medicine-taking is highlighted in Chapter 3. The findings from data collection at Study Site 3 indicate that these can be difficult to negotiate, and may act as a barrier to information and therapeutic management of clinical conditions, including medication therapy.

In addition to health beliefs, other patients had a clinical pathology or age-related condition that appeared to make information-giving inappropriate or difficult. For example, patients who were depressed or had altered cognitive function post-CVA appeared to have limited interest in or capacity for assimilating information. These patients were often dependent on carers for medication administration and, nurses' contribution lay in preparing Dosett boxes for carer use.

Little carer education was observed during the course of data collection. The importance of involving carers and acknowledging their expertise was highlighted by the carer focus group findings (CFG Box 6.1). Carers had experienced unhelpful interactions about medication with health care professionals, including nurses, and had relied on other sources of support and information, principally accessible pharmacists and written sources such as medication dictionaries.

The group discussion took place in February 1999 within the context of the carers' scheduled monthly meeting. Seven carers were present, in addition to the son of one carer and a social worker. All those present were either currently or formerly acting in the capacity of carer to another family member, and had experience of administering a variety of medications to adult carers. All of those present had had contact with health care professionals regarding medication.

- Carers expressed concern and frustration that their knowledge and expertise in caring for their family member was not acknowledged by health care professionals, particularly during hospital admissions. This included their knowledge and experience in relation to the carer's medication – carers described inappropriate prescriptions.
- Local pharmacists were evaluated as a good source of advice about medications. Carers reported that they provided information about prescribed medication, could suggest alternatives if unsuitable, and gave advice about incompatibility of newly-prescribed medicines with those that the carer was already taking. Knowing the carer and carer through continuity of contact was felt to be important.
- To fill in information gaps about medication, carers also reported a reliance on 'drug dictionaries', books and written information leaflets. These were used to obtain information about the effects, side-effects and incompatibility of prescribed medicines in the absence of advice from health care professionals. Information on side-effects was considered to be particularly important.
- Carers reported a mixed evaluation of their experience with nurses and medication information. Some had not had recent contact with nurses, contact being limited to GPs. Others reported that specialist (Macmillan) nurses had been helpful in advising on medications and that nurses were more helpful and 'in touch' than doctors. However, negative experiences of nurses being unhelpful, during hospital admissions, were reported.
- There was also a mixed evaluation of the helpfulness of GPs in relation to information about prescribed medicines. Hospital doctors were perceived as particularly unhelpful in this respect.
- It was clear that carers made adaptations to their carer's and their own medications based on the knowledge and beliefs they had about them. For example, one carer reported reducing the dosage of her own anti-arthritis medication in response to perceived side-effects, and another said that medications were individually stopped on a trial and error basis in order to identify which may have been causing the side-effects noted in the carer.

CFG Box 6.1: Study Site 3: Summary of analysis of carers' focus group

It is interesting to note that in Study Site 1 patients' apparent preferences for low levels of information, multiple pathology and acuity were seen as contextual factors impinging on iAction. There, the acuity of patients and the busyness of an acute ward contributed to an 'organisational culture' that imposed a glass-ceiling of safe, yet low level of information. At Study Site 3, there was a specific individualised imposition of such a ceiling and thus both CNs' and GPNs' iActions contributed to the understanding of the sub-components of *patient scenario* and *clinical judgement* rather than to clinical context.

6.6 The clinical context of Clinical Areas A, B and C on nurses' iActions

iActions as identified by the research team, were mediated to a degree, in the case of CNs, by the task-oriented demands of patients to fill up their Dosett boxes. Tuesday was Dosett day. Such demands, the long established tablet-taking habits of patients and the busy schedule of home visits combined to limit the interaction to the task of refurbishment. In the case of GPNs, there appeared to be no contextual constraints on iAction.

CHAPTER 6 6.7 Educational preparation and iAction: reflection and retrospectives

It was apparent during the researchers' observations that both CNs and GPNs drew on their pharmacology knowledge in their interactions with patients. However, this was generally used to inform their role in monitoring prescriptions and initiating changes to medications, rather than as part of patient medication education. Knowledge of the actions and side-effects of medicines was used to check patients' conditions in relation to currently prescribed medicines, as illustrated in the interactions with patients requiring hypertensive medication and laxatives. Pharmacology knowledge was also used when nurses initiated changes to a patient's medication or its management. Nurse 5 confirmed that her decision to refer a patient on a depot contraceptive to the GP was based on her understanding of the potential oestrogen depletion caused by long-term use of Depo-Provera. Knowledge about the length of action of diabetic medication was used to inform Nurse 1's decision-making about a patient's regimen:

'That's your biggest meal? In the afternoon? Well, look, we'll save this ... [component part of the medication] ... because they last quite a long time in the blood. The safest would be to take three in the morning and two in the evening.' (N1S3)

All the nurses observed were asked about their acquisition of pharmacology knowledge. Nurses 1 and 5 also commented on this in the focus group discussion. They considered that their knowledge was the result of self-directed learning in practice, through, for example, the BNF and liaison with GPs and pharmacists, as opposed to formal educational preparation during their pre-registration or subsequent education. Nurse 1 also commented on the value of the asthma course in giving her an in-depth knowledge of the management of this condition, including pharmacological aspects.

To a certain extent, communication skills were apparent in the imparting of simple information, which was free of jargon and technical information, and in a language that patients could understand. Questioning skills were observed in nurses' assessments of patients' conditions as part of monitoring the effects of prescribed medicines. More sophisticated skills, such as deliberate and explicit use of open questioning to elicit patients' knowledge of their tablets and preferences for information, were not observed. Skills in modifying patients' health beliefs were also absent from interactions.

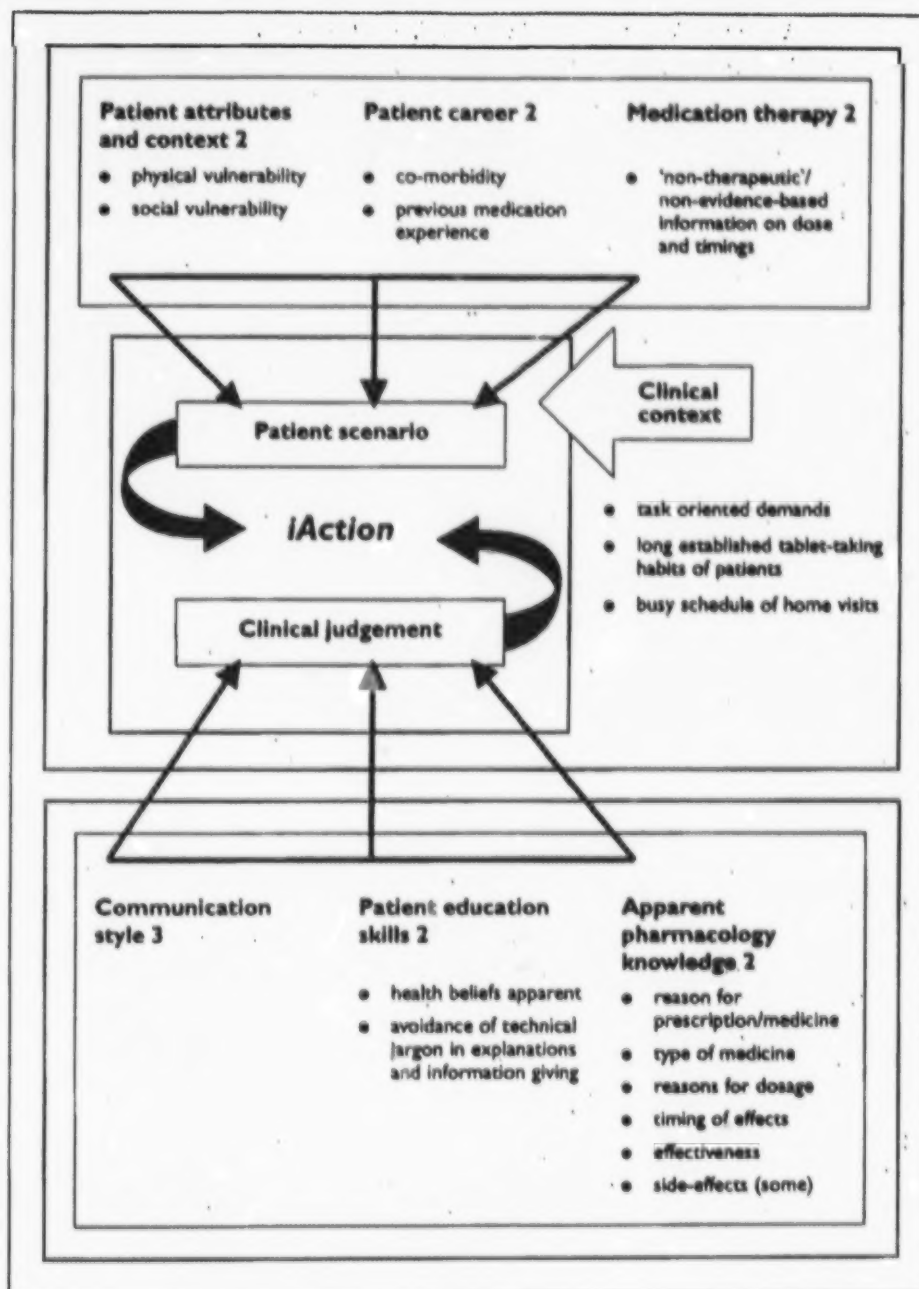
These findings relate to the lack of formal sessions on communication skills, patient education theory and pharmacological principles identified by nurses at the education institution at Study Site 3. As noted above, acquiring knowledge and skills through a reliance on experience alone, in the absence of any theoretical underpinning raises questions about the effectiveness of preparation for practice.

6.8 Conceptual framework and actual practice base levels for Study Site 3 Clinical Areas A, B and C

iActions in the clinical areas can be summarised as monitoring patient prescriptions, checking adherence and information-giving about medicines. Clinical context factors, which influenced the quality and quantity of such interactions, were task-oriented demands, long-established tablet taking habits and the busy schedule of home visits.

Nurses interviewed emphasised the importance of acquiring knowledge and skills through practice settings and experience. A lack of formal education, particularly in the areas of patient education and communication skills, was noted.

Based on the findings of the extent to which nurses were drawing on the content lists of the sub-components, *actual practice base* levels were allocated. The reconstructed conceptual framework for Study Site 3 Clinical Areas A, B and C is shown in Figure 6.1.



Level 1 Maximal: maximises use of potential evidence base (PEB)
 Level 2 Partial: partially uses PEB
 Level 3 Minimal: minimally uses PEB

Figure 6.1: Conceptual framework and actual practice base levels:
 Study Site 3 Clinical Areas A, B and C

6.9 Study Site 3: Educational Institution

Study Site 3 Educational Institution was a school within a post-1992 university situated in the south of England. It offered a Bachelor's degree programme in community nursing with specialist branches for community nursing in the home (CN), general practice nursing (GPN), health visiting (HV), community mental health (CMH) nursing and occupational health nursing (OHN). Opportunities were available for shared learning both across branches and with other students such as those undertaking health studies or social work courses.

Students were sponsored from a number of local community trusts, and gained clinical experience with an SPT in the sponsoring trust. GPN students were funded by local health authorities or GP practice budgets or were self-funded, and worked with an allocated GPN SPT, as well as maintaining their own practice caseload in a GP surgery.

6.10 Research activities at the Educational Institution

Research activities included focus group discussions, non-participant observation of a classroom session and student interviews. Data collection by two research team members took place between October and December 1998.

A focus group with specialist practice pathway leaders for CNs, GPNs, HVs and CMHNs was conducted, eliciting pathway leaders' views about nurses' preparation for, and practice of, a medication education role, as well as contextual issues relevant to understanding preparation for specialist practice at the site. A focus group with SPTs was also conducted. Details of participants' characteristics are given below:

- three GPN and SPTs
- two GPN, SPT and practice managers
- one CN and SPT
- two HV and SPTs.

Classroom-based non-participant observation was restricted to one session due to the lack of explicit, taught content on either pharmacology or patient education and communication skills. In the fifth week of semester one, one two-hour session in the specialist practice module was observed where the focus was on student discussion and feedback from a 'pharmacology exercise'. The respective pathway leaders facilitated a session involving CN, HV and CMHN students, who were required to present a 500-word case study of a patient taking a medication common to the student's practice area. Students were required to give:

- an overview of the patient
- details of the medication
- the patient's perspective of the drug
- relevant professional and ethical issues.

Students discussed their case study within their respective specialist groups and summarised issues raised for feedback to the class as a whole. The exercise was later incorporated into the student's reflective practice portfolio. An informal discussion with five CN students was held following the session.

Interviews were conducted with groups of students on the full-time and part-time programme, as well as with graduates from the 1997/1998 programme:

- four 1997/1998 CN graduates
- three GPN pathway (P/t) students
- three GPN pathway (P/t) students.

6.11 Specialist practitioner curriculum overview

The community nursing degree comprised a 40-week programme for full-time students, which was taken over two years by part-time students. A minimum of one year's professional practice was required prior to entry to the programme. Key features of the curriculum, as stated in the definitive programme document included:

- a philosophy that emphasised shared learning and a demand for higher-level knowledge and skills. The latter included 'a high level of clinical judgement', a requirement to 'promote health' and to 'improve health outcomes'
- overarching programme aims containing a commitment 'to build on students' existing knowledge and expertise so that they might develop Specialist Practice'
- curriculum learning outcomes including an ability to develop appropriate and effective relationships with service users and the professional team through support, empowerment, teaching and supervision
- a spiral curriculum model that emphasised the early introduction of key subjects followed by their re-introduction at a more complex level later in the programme
- a commitment to discovery learning, which enabled application of principles to practice, to the development of problem-solving capabilities and to reflection as a means of learning through previous and current experience.

A 'feeder' diploma in community nursing was offered to students needing to acquire Level 2 credits prior to accessing the undergraduate programme. The diploma programme included modules on health promotion and health education, reaching and assessing, and health psychology. Some learning outcomes, relevant to the focus of the project, included the ability to:

- participate in debates about health education issues, make ethical evaluations (health education and health promotion)
- know and understand the consequences of the inter-relationship between psychological, physiological and sociocultural factors which affect health behaviours (health psychology)
- demonstrate comprehension of various psychological models and theories which explain health behaviours and health issues (health psychology).

The degree programme consisted of eight modules, four of which were common to all pathways and four of which were designated specialist modules.

Pharmacology and nurse prescribing could be studied as part of the CN and GPN specialist practice modules. The definitive programme document stated that in this module, lectures, guest lectures, critical incidents and reflection on practice were used to explore a number of clinical issues in relation to specialist practice. Learning outcomes for the specialist modules focused on developing students' ability to use generic skills such as:

- the analysis and use of data for health profiling
- provision and evaluation of specialist nursing care to meet health needs in a variety of settings
- the ability to undertake health promotion and illness prevention strategies
- problem-solving and decision-making
- management of programmes of care for patients with chronic illness
- the ability to work collaboratively with other agencies.

Clearly, these skills could be applied to medication education, although specific topics were not explicitly mentioned in relation to learning outcomes.

Teaching and learning emphasised student-centred methods in informal settings in order to maximise opportunities for student interaction and reflection, including group work, workshops and seminars. Associated assessment strategies included essays, reports, practice assessments and a reflective practice portfolio, which, according to the programme document, facilitates reflection, integration of learning and synthesis of practice and theory.

Data from the survey confirm the variety of teaching methods used on specialist practice programmes (NSD Box 6.1). The majority of survey respondents also considered that post-registration students require different teaching and learning techniques than those used to teach pre-registration students (NSD Box 6.2).

In accordance with UKCC proposals and Board guidelines, the proportion of theory to practice experience is 50:50, and full-time students spend two days a week in both university and practice settings, with blocks of practice consolidation at the end of each semester. Each student is allocated an SPT in the practice area for the duration of the programme to facilitate learning and undertake formative and summative assessments.

Method	Always utilised	Frequently	Occasionally	Never
Lectures (n = 18)	8	7	3	–
Seminars (n = 14)	1	10	2	1
Case studies (n = 17)	2	9	3	3
Guides/workbooks (n = 15)	1	2	8	4
Problem-based learning (n = 15)	3	4	2	6
Computer-assisted learning (n = 13)	–	2	1	10

NSD Box 6.1: Methods used to teach pharmacology on specialist practice pathways
(number of post-registration Section 2 respondents)

Likert item: <i>Post-registration students require different teaching and assessment techniques than pre-registration students</i>	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 post-registration respondents (n = 39)	–	17.9%	7.7%	59%	15.4%

NSD Box 6.2: Post-registration teaching and assessment techniques

6.12 Concept analysis and Education Study Site 3

Analysis highlighted a number of issues concerning specialist practitioner preparation for a medication education role:

- How do specialist practitioners acquire 'post-basic' pharmacology knowledge?
- How do specialist practitioners integrate experiential and theoretical knowledge?
- What perceptions do specialist practitioners have of the nurse's role: medication administration and prescribing or patient education?

6.12.1 The acquisition of 'specialist' pharmacology knowledge

As noted above, the taught pharmacology component was limited to the specialist practice module. This consisted of a lecture by a visiting pharmacologist from another university, and was not evaluated well by students interviewed. One CN graduate felt that it provided 'very, very basic knowledge' and was 'just the beginning of something really'. Three other GPN

students also felt that the lecture had been bioscience-orientated, limited in depth of knowledge, and without obvious relevance to practice. **CHAPTER 6**

Findings from the survey confirmed that, in the majority of institutions, pharmacology was included within specialist practice-type modules (NSD Boxes 6.3, 6.4 and 6.5). NSD Boxes 6.6 and 6.7 report further findings concerning the number of hours dedicated to pharmacology within such programmes, and respondents' opinions as to the time available to teach pharmacology.

Programme	Yes	No	N/A
CN (n = 20)	13	2	5
GPN (n = 21)	16	2	3
Elderly care (n = 20)	16	–	4
Medical nursing (n = 19)	14	–	5
MH (n = 15)	13	–	2
CMH (n = 16)	13	2	1

NSD Box 6.3: Does taught pharmacology form part of the specialist practice pathways? (number of post-registration Section 1 respondents)

Likert item: <i>Post-registration nursing students do not need pharmacology teaching due to its inclusion in the pre-registration curriculum</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 post-registration respondents (n = 40)	37.5%	52.5%	5%	2.5%	2.5%

NSD Box 6.4: Do post-registration students need pharmacology teaching?

Programme	Yes	No	N/A
CN (n = 19)	1	13	5
GPN (n = 20)	1	16	3
Elderly care (n = 18)	1	12	5
Medical nursing (n = 15)	1	10	4
MH (n = 15)	1	12	2
CMH (n = 16)	1	11	4

When asked to specify the module, in which pharmacology was located, the most frequently cited response was that it formed part of a 'specialist practice' module. This was the case for all of the pathways targeted by the questionnaire. General comments were made at the end of the questionnaire, and several respondents expressed a degree of reservation about the extent to which pharmacology was expected to be informally integrated into learning rather than explicitly taught.

NSD Box 6.5: Is pharmacology taught as a separate module within the specialist practice pathways? (number of post-registration Section 1 respondents)

When asked to specify the module in which pharmacology was located, the most frequently cited response was that it formed part of a specialist practice module. This was the case for all pathways targeted by the questionnaire. In general comments made at the end of the questionnaire, several respondents expressed reservation about the extent to which pharmacology was expected to be informally integrated into learning rather than explicitly taught.

Likert item: <i>Generally, there is sufficient time in the post-registration nursing curriculum dedicated to pharmacology</i>					
	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Section 1 and 2 post-registration respondents (n = 39)	7.7%	46.2%	20.5%	25.6%	—

NSD Box 6.6: Time dedicated to pharmacology

Programme	Hours					NA
	0-5	6-10	11-15	16-20	>20	
CN (n = 17)	8	3	5	—	—	1
GPN (n = 17)	9	3	4	—	1	—
Elderly care (n = 17)	8	2	2	—	2	3
Medical nursing (n = 15)	5	4	1	—	1	4
MH (n = 15)	5	6	1	—	—	3
CMH (n = 16)	5	7	1	—	—	3

NSD Box 6.7: Number of taught/teacher directed hours in the post-registration curriculum dedicated to the teaching of pharmacology: (number of post-registration Section 1 respondents)

Instead, pharmacology knowledge was acquired by students via other means. Some GPN students reported that this occurred as part of clinical modules undertaken on courses for asthma and diabetes that were extra-curricular to the specialist practice programme. For instance, one student considered that:

'If you look at practice nurse education, that's normally how most of us have acquired our knowledge on pharmacology, specific aspects that we've developed and then gone on to look at the pharmacological aspects.' (S1ES3)

Nurses valued the depth and breadth of pharmacology covered in these modules as well as their multidisciplinary nature. However, the pharmacology in clinical modules was limited to medication related to the condition being studied, as opposed to a broad knowledge base of pharmacology and principles spanning different areas of health and illness. Learning pharmacology this way affected nurses' confidence in relation to medication. As one GPN noted:

'I don't really dabble in hypertension stuff because I don't really know enough about what I'm doing, but in asthma, diabetes and family planning, I'm completely happy that my knowledge base is good and up to date.' (S2ES3)

A GPN, who took part in practice data collection, also felt that she had in-depth knowledge about asthma, including its pharmacological management, as a consequence of undertaking a stand-alone asthma module. However, it was unclear to what extent modules undertaken by those interviewed were a function of individuals' interests and preferences, or of the needs of the practice population with whom they worked.

Interviewees also reported that pharmacology knowledge was acquired by self-directed learning undertaken for an assignment on the degree programme. For example, one CN graduate had undertaken an extended literature review on falls in the elderly, including the contribution of pharmacology. She reported that this had had an impact on her current practice working with the early discharge team, where falls were a common problem; she was now able to identify where medicines were a contributory factor. Another CN graduate had learnt about pharmacology and changed her practice as a consequence of undertaking an extended literature review on carers' needs. Now, she gave more information on medications, including side-effects, that carers were expected to administer. A third CN had undertaken a project with a community pharmacist on protocols as part of the specialist practice module.

'... so that [pharmacology] does come into it, dealing with drugs and talking about information we're going to give to patients, so although it's not direct, there is an impact ...' (S3ES3)

However, this method of acquiring knowledge was considered as 'hit and miss', depending on the focus of assignments. Survey data also indicated that pharmacology was not always formally assessed as part of a theoretical assignment (NSD Box 6.8).

Programme	Not assessed	Assignment	Exam	Exam and assignment	Assignment and other	Other	N/A
CN (n = 17)	5	3	1	1	1	2	4
GPN (n = 19)	7	3	1	1	1	3	3
Elderly nursing (n = 15)	7	2	—	—	2	1	3
Medical nursing (n = 14)	6	3	—	—	1	—	4
MH (n = 13)	7	2	—	—	—	—	4
CMH (n = 16)	8	1	—	—	1	2	4

Details were requested about the format of assessments relating to pharmacology. The vast majority of comments about all pathways pertained to the assignment, and it was clear that such assignments were focused on practice or were actually practice-based.

NSD Box 6.8: Methods used to assess pharmacology knowledge and skills on specialist practice pathways (number of post-registration Section 1 respondents)

Observation of the pharmacology exercise feedback session indicated that this had provided another opportunity for self-directed learning about one medicine commonly used by patients in the practice setting. The exercise also encouraged students to consider pharmacology in relation to patient perspectives and professional and ethical issues, and provided the opportunity to learn from each other. However, the focus of students' discussion and feedback was largely confined to pharmacology and prescribing issues, as opposed to a patient focus or the educational implications. This exercise was undertaken comparatively early in the programme. The students' evaluation indicated that it was difficult to fulfil the requirement of focusing on patient perspectives as they were only just becoming familiar with their SPT's caseload. Nevertheless, a focus on prescribing, as opposed to patient education, was also noted in data collected from more experienced practitioners.

Both CN and GPN interviewees reported that self-directed learning about the pharmacology of medicines was also required as a consequence of needing to be accountable for practice. Interviewees reported that they would look knowledge up if they were unsure. For example, one CN graduate said:

'In practice I found that I'd do a lot of self-directed learning myself, because sometimes if you were allocated a caseload or if people had Dosett boxes, or you have to get their medications ready, no one tells you what to do, you just have to make sure that you go and read up on it. You have to make sure that you feel competent in giving it, and if you didn't know, you have to find out. But I don't think they ... [the university] ... prepared you for it, a lot of it was just like, do it yourself.' (S4ES3)

These concerns related to recognition of the vast body of pharmacology knowledge that was consistently being updated, making it difficult to formally teach the breadth and depth of knowledge required for practice. The practice of nurses being involved in day-to-day decision-making about patients' prescriptions in consultation with GPs, was confirmed by data collection in the clinical areas at this site.

Within the focus group, and small group interviews with students, there was divided opinion about the extent to which nurses should be expected to undertake self-directed learning, as opposed to taught programmes in preparation for their role. The latter view was strongly expressed particularly by GPNs who felt that access to pharmacology programmes was a necessity. One of the themes to emerge was the need for an introductory programme or module in pharmacology both for GPNs who had not recently accessed formal education, and nurses preparing for a prescribing role. Specialist pathway students and graduates also identified the need for taught pharmacology in preparation for practice: *'to get enough to be useful, you would need quite a lot ... it's a module in itself really'*. GPNs in the focus group and those on the specialist practice pathway identified a range of issues that they would like to see covered in study days or a module:

- purpose and action of medicines
- side-effects of medicines
- major medication interactions
- the current 'status' of medicines (available or withdrawn)
- correct storage of medicines.

There was recognition that the nature of pharmacology requires nurses to utilise self-directed learning in practice in order to maintain their knowledge base about medication. Also that this needs to be complemented by opportunities for such learning in practice settings, through SPTs, databases and drugs bulletins.

6.12.2 The integration of experiential and theoretical knowledge

Students on the specialist practice programmes were required to have a minimum of one year's post-registration experience. However, many had gained several years' experience. For GPNs, this was often in practice nursing, whilst for others, experience had been gained in a variety of specialties including both community nursing and acute care practice. Thus, students brought both a variety and wealth of experiential knowledge, including experience of medication interactions. It was this experience that had prepared them for their medication education role, particularly in relation to the principles of communication and patient education. Interviewees cited explanation-giving; the administration of morphine by syringe-driver to terminally ill patients was used as an example. However, it appeared that the majority had not been exposed, via formal educational preparation, to communication skills or health psychology. The extent to which experiential knowledge can form the basis for effective practice of a medication education

role, as opposed to practice underpinned by theory, was reflected in clinical data collected at this site. There were instances with experienced practitioners when the application of communication skills or health psychology could have enhanced medication interactions.

The Level 3 specialist practice programmes did not explicitly address communication skills theory, the principles of patient education or health psychology. The extent to which this applies to similar programmes elsewhere is questionable: the majority of survey respondents identified that there were opportunities for integration of pharmacology with both communication and patient education skills (NSD Box 6.9).

Pharmacology knowledge and patient education principles				Pharmacology knowledge and communication skills			
Programme	Yes	No	N/A	Programme	Yes	No	N/A
CN (n = 32)	23	5	4	CN (n = 33)	19	8	6
GPN (n = 35)	27	5	3	GPN (n = 35)	22	8	5
Elderly care (n = 34)	25	5	4	Elderly care (n = 36)	20	10	6
Medical nursing (n = 32)	23	5	4	Medical nursing (n = 34)	17	11	6
MH (n = 31)	22	6	3	MH (n = 33)	18	10	5
CMH (n = 32)	23	6	3	CMH (n = 33)	20	9	4

NSD Box 6.9: Opportunities for integration of pharmacology knowledge with the principles of patient education and communication skills
(number of post-registration Section 1 and 2 respondents)

These subjects were covered within the diploma feeder programme which some students had undertaken. There was evidence to suggest that exposure to both these modules and others within the degree pathway had benefited practice. The practice nursing pathway leader considered that the formal, taught knowledge that students acquired during the programme generally added confidence and a theory base to previous or existing modes of practice. This was confirmed, for example, by one GPN interviewee who was asked about the health education and health promotion module within the diploma programme.

'I think probably a lot of it, we did already know what we were already doing, but it's having the theory behind that, because some of it you just do because it works for you, or maybe you have learnt it from someone else, but you haven't known why. It was a useful module.' (S5ES3)

Others identified how learning acquired during the programme had changed their way of thinking about medication education.

'It might make you aware of issues, when you're talking about ethical principles, last week. It might make you think about particular issues, or when you're doing a health promotion module, it might just concentrate your mind a little bit on a particular issue.' (S1ES3)

'Before I came on the course I used to perhaps see a patient for a 'flu jab, I had pressure from the GP to say give that 'flu jab, give that 'flu jab, so I wouldn't really question very much or ask very much of the patient and now I'm much more different, and now I've reflected, that I give the patient much more choice, and I think that's quite important and I'm happier with that now.' (S6ES3)

This latter example was illustrative of the tension mentioned by both students and lecturers: increased knowledge and understanding might enhance medication interactions with patients, but not necessarily result in greater adherence to medicine-taking. As increased awareness of health promotion principles such as patient choice is acquired, this may create a dilemma between acting as patient advocate and the demands of employers whose agenda is to reach targets in relation to, for example, vaccine administration or contraceptive uptake. This tension was strongly articulated by all pathway leaders in the focus group discussion.

One group of GPN students explicitly said that SPTs had not contributed to their preparation for the role of medication education. However, the extent to which they were explicitly facilitated in education and practice settings to consider the application of broad principles to specific aspects of their practice such as medication interactions was not clear.

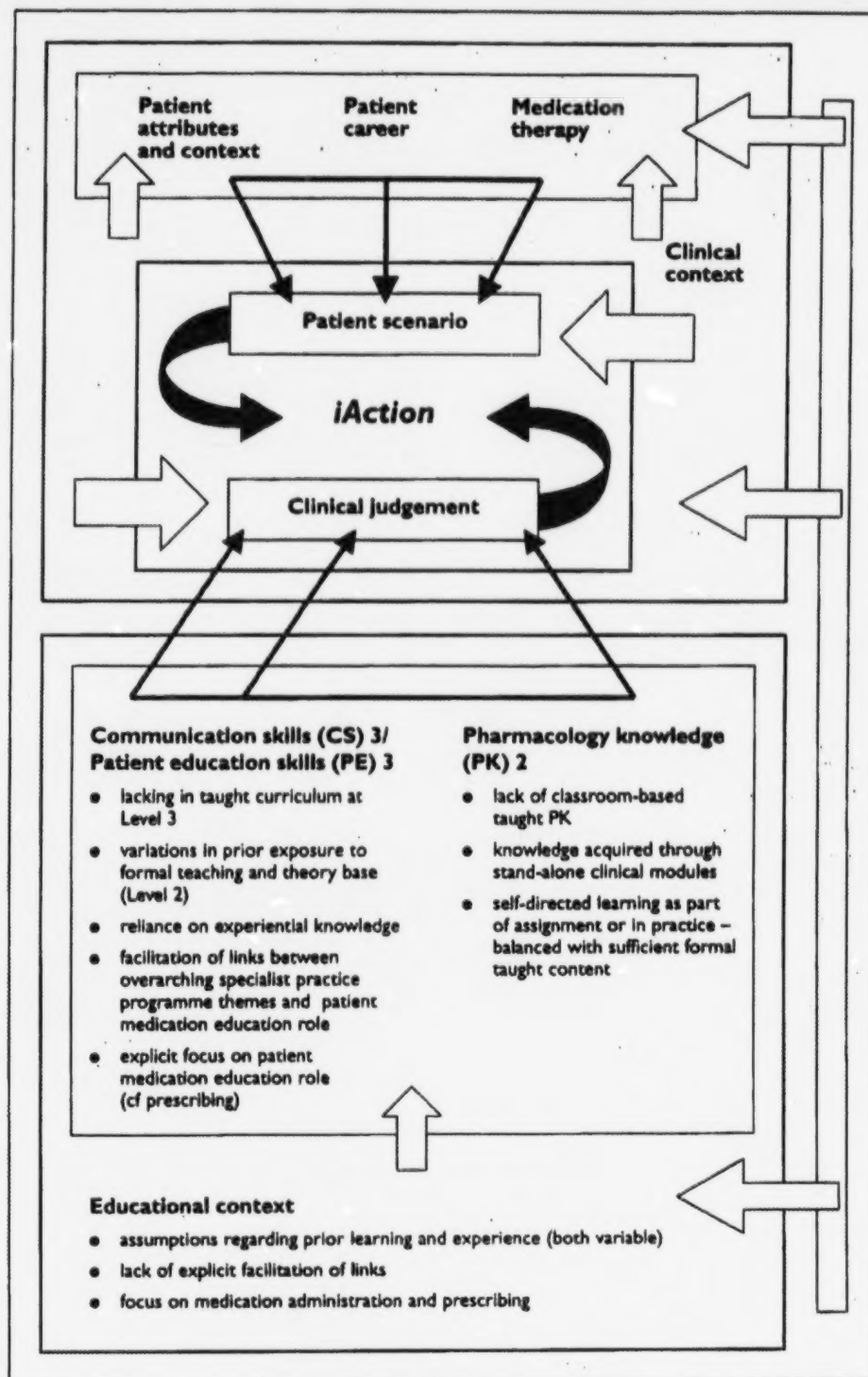
6.12.3 Perceptions of nurses' role: medication administration and prescribing or patient education?

Participants focused their comments on CNs' and GPNs' role in prescribing and administering medicines, as opposed to their role in educating patients about medication. In the focus group, SPTs continually referred to the necessity for pharmacological preparation for a prescribing role. Moderator intervention was required to refocus the discussion on perceptions about preparation and practice of medication education. Students and graduates also focused on issues relating to prescribing, both in interviews and in the class-based session on pharmacology. Whilst curriculum documents referred to the prescribing function of nurses, no mention was made of patient education about medication.

At the time of data collection, some CNs were using the *Nurse Formulary* to prescribe. A prescribing role for practice nurses was anticipated in the report of the second Review of Prescribing, Supply and Administration of Medicines. Clearly, the currency of this issue might have been responsible for participants' focus on this aspect of medication. It was also easier to identify the 'hard' pharmacology knowledge necessary to ensure informed prescribing than to articulate the multidimensional components of effective iAction. Whilst prescribing by nurses was known to be designated as a specialist practice function, the specialist practice of medication education received little attention and was therefore less clear. Clearly, medication prescribing, administering and education are interlinked. Furthermore, it was recognised that effective prescribing goes beyond prescription writing and should include patient education if the prescription is to have maximum therapeutic effect. However, the characteristics of medication education interactions and their relation to longer-term indices of adherence and therapeutic outcomes, were not discussed at Study Site 3.

6.13 Conceptual framework and actual curriculum base levels for Study Site 3 Educational Institution

Findings from Study Site 3 highlighted dimensions of the sub-components of medication education as they appeared within the curriculum. There was a lack of formally taught pharmacology and communication and education skills within the specialist practitioner programmes, with instead, a reliance on acquiring this from stand-alone clinical modules and from experience. Participants felt that self-directed and experiential learning needed to be balanced with formally taught content. The need for specific links to be made between overarching programme themes and medication education skills was noted, as well as the requirement to refocus on this role in addition to medication administration and prescribing. Educational context variables that contributed to explanation of the above were identified and are highlighted in Figure 6.2.



Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Figure 6.2: Conceptual framework and actual curriculum base levels for Study Site 3 Educational Institution

7.1 Introduction

In this chapter, overarching conclusions and developmental implications for nurses' iActions for medication education and the curricular preparation for such a role are outlined below in relation to the research aims. Tables 7.1-7.7 summarise the findings from clinical areas and educational institutions at each of the study sites.

More importantly, the process of concept analysis as an evaluative tool for curriculum and/or practice development is demonstrated using examples from the study sites to illustrate its operationalisation. This model of curriculum and practice development is a 'conclusion', in that it is derivative of the research process. It is also an identification of the implications for nursing education and practice, in that it suggests future development programmes for curriculum designers and for practitioners, and furthers research into the concepts underpinning nursing iActions.

7.2 iAction and curricular preparation for medication education

One aim of the project was to:

- evaluate the effectiveness of nurses' application of pharmacology knowledge, communication and education skills within practice settings
 - by illuminating the individual, professional, educational, clinical and organisational factors that operate to facilitate or inhibit such application in practice.

Summary of iActions in clinical areas (CA)	Site 1 CA-A	Site 1 CA-B	Site 2 CA-A	Site 2 CA-B	Site 3 CA-ABC
By sub-component:					
Patient attributes and context	2	1	2	1	2
Patient career	2	2	2	1	2
Medication therapy	2	2	2	1	2
Communication style	3	2	2	1	3
Patient education skills	2	2	2	1	2
Pharmacology knowledge	2	2	2	1	2
By conceptual themes:					
Simple information about medication regimens	X		X		X
Giving instructions and checking understanding at the point of discharge	X				
Facilitation of self-medication		X			
Liaison with professionals and carers	X	X	X	X	
Monitoring medication outcomes and side-effects/ monitoring prescriptions			X	X	X
Negotiating medicine management with clients			X	X	
Medication administration	(X)	(X)	X	X	(X)
Teaching clients				X	
Evaluating adherence				X	X
Working with clients' beliefs and motivations				X	

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

X = iAction occurred

(X) = medication administration, although occurring, did not involve medication education

Table 7.1: Summary of iActions in Clinical Areas: by sub-component and conceptual themes

An overview of nurses' iActions as observed across the clinical areas (Table 7.1) indicated that their contribution to medication education was multidimensional and contingent upon contextual factors.

The multidimensional aspects of the role were observed in relation to iActions that ranged from interactions with patients to liaison with health care professionals and carers. In operationalising these roles, nurses drew on and applied knowledge and skills from the sub-component knowledge areas considered to constitute the concept of medication education. How such knowledge and skills were used was, to some extent, context-dependent. However, the project findings indicated that nurses' use of the sub-components was, generally, not explicitly informed by an assessment of the maturity of the evidence of the concept and/or its sub-components. Clinical Area B, Study Site 2, was the possible exception here.

Information about medication provided by nurses was generally limited to simple information-giving and concerned such aspects as dose, time to be taken and frequency. It was suggested that acutely ill patients' limited capacity to engage in comprehensive and evidence-based interactions about medication contributed to this restriction. Nevertheless, amongst some patients, there was evidence of unmet need; this was also a strong feature of the carers' experiences. Carers' focus group discussions highlighted that the need to share information and carers'

expertise and experiences were frequently not acknowledged by health care professionals. Carers wished to be informed about such aspects as medication side-effects and interactions, and often relied on more accessible sources of information, for example, community pharmacists and medication dictionaries.

Clearly, nurses need to maximise opportunities for meeting carers' information needs. This is consistent with the strategic elements outlined in *Caring About Carers: A national strategy for carers* (DoH, 1999c), which recommended that all organisations involved with caring must include not only the patient but also the carer when giving information, providing support and delivering care.

In this project there was a danger that apparent preferences for minimal information were inappropriately generalised across individual patients and carers. If one accepts that need for information might evolve during an illness episode and/or a period of contact with health care professionals, it follows that assessments of patients' and carers' needs for information and education about medication should be made on an individualised and ongoing basis.

Whilst many patients expressed preferences for minimal information and involvement in decision-making, the dramaturgical approach implicit in the conceptual framework points to the fact that such preferences might be inextricably bound up with previous experiences that were founded on limited expectations. Thus the case could still be made for more proactive, preparatory information-giving about medicines. Nurses within Clinical Area B of Study Site 2 showed that they were in a position to facilitate partnership and to raise expectations about what is possible and desirable within health care interactions. Such conclusions are consistent with recent recommendations calling for the development of approaches to pre-registration education that focus on patient/client need (ENB, 1999) and highlight the importance of partnership and preventative advice (DoH, 1999a).

Nurses' role in front-line, ongoing monitoring of medication outcomes and side-effects, coupled with the liaison and negotiation necessary to facilitate prescription changes, was apparent in the clinical areas. Their often continuous or regular contact with patients, in the absence of patient contact with other health care professionals, contributed significantly to the role. The importance of pharmacology knowledge to fulfil such a monitoring role was indicated here. This finding also illustrated the importance of breaking with traditional role boundaries, such as those that limit the prescription of medicines to the medical profession, and of developing health care services that are flexible, accessible and responsive to need. Table 7.2 summarises the contextual factors influencing nurses' actions in the clinical areas.

Facilitating factors	S1 A	S1 B	S2 A	S2 B	S3	Inhibiting factors	S1 A	S1 B	S2 A	S2 B	S3
• Philosophy of care		X				• Acute nature of the patient's condition	X		X		
• Use of structured assessment tools		X				• Patient preference for a low level of detail about medication/long established medication habits	X		X		X
• Individual storage of patient medicines		X				• Lack of time and high workload	X	X	X	X	
• Nurse-led clinical area		X		X		• Availability of permanent qualified staff		X			
• Multidisciplinary decisions		X				• Task orientation					X
• Nurse-patient relationship			X	X							
• Clients in remission				X							
• Low cost-benefit ratio of medication				X							

X = the influence of factors at the study sites

Table 7.2: Summary of contextual factors influencing nurses' actions

Not surprisingly, perhaps, nurses cited acuity, busyness and the lack of permanent qualified staff as factors inhibiting medication education as conceptualised in the theoretical framework. However, Clinical Area B at Site One had demonstrated that, by adopting a patient-centred philosophy of care with the concomitant changes to the organisation, medication education could be prior to the patient discharge process, avoiding the need to rush or to exclude it altogether.

7.3 Developmental implications related to educational preparation

Other aims of the research were:

- to evaluate the effectiveness of education curricula in preparing nurses for a medication education role
 - by illuminating the factors, individual, professional, educational, clinical and organisational that operate to facilitate or inhibit such preparation for practice
 - by providing a national overview of curriculum design and delivery factors related to pharmacology knowledge and communication and education skills within pre- and post-registration programmes.

Table 7.3 summarises themes derived from educational retrospectives of practitioners. Tables 7.4-7.7 summarise the themes derived from the analysis of data from the educational institutions, including contextual factors; the *actual curriculum base* levels are also noted. Whilst further details of site-specific findings were discussed in Chapters 4-6, a number of over-arching developmental implications arise.

- Within the curricula studied, there did not appear to be a clear delineation of the competencies required for a medication education role within different clinical environments and levels of practice. As a precursor to the inclusion of appropriate knowledge and skills within curricula, explicit attention needs to be given to defining and clarifying expectations. Such a debate needs to take place in the context of the broader framework of developing outcome-based curricula that specify national core competencies (ENB, 1999) and of identifying national standards and skills, as recommended in *Making a Difference* (DoH, 1999a).

'The NHS needs to know that nurses are trained to broadly the same standards and have the same skills – wherever they are trained.'

(DoH, 1999a: 29)

- The project findings indicated a lack of attention within education curricula to the sub-components underpinning the concept of medication education, the maturity of their evidence bases and the relations between these. The concept analysis approach to curriculum planning identified here would serve as a first step towards rectifying this, by establishing an 'educational governance' agenda consistent with the Board's recent recommendations concerning future nurse education policy, as outlined in its submission to the UKCC Commission for Education:

'There is a need to continue to develop evidence-based teaching/learning and enquiry-based curricula.' (ENB, 1999: 4)

Educational retrospectives	Site 1	Site 1	Site 2	Site 2	Site 3
	A	B	A	B	ABC
Positive					
Importance of practice-based learning	X		X		X
Importance of continuing lifelong-learning	X		X		X
The contribution of ENB short courses		X			X
The importance of communication skills in mental health nursing			X	X	
Negative					
Dissatisfaction with pharmacology in pre-registration curriculum	X				
Variability in practice-based learning	X				
Variability in curriculum content with respect to communication and education skills	X				X

X = retrospective view expressed

Table 7.3: Summary of educational 'retrospectives' from practitioners in clinical areas

- Dissatisfaction with a number of dimensions of pharmacology teaching was also apparent. Findings from the educational institutions at all study sites and from the national survey indicated a need for more taught pharmacology within pre- and post-registration curricula:
 - any possible increase needs to be viewed within the context of nationally outcome-based curricula for nurse education
 - decisions about the extent of pharmacology knowledge included in the curriculum should not be taken in isolation, but following clarification of knowledge and skills necessary for a medication education and other pharmacology-related nursing competencies.

However, given the extensiveness and dynamic nature of pharmacology knowledge, it was considered that there needs to be a balance of formally taught programmes, self-direction and updating. This finding underscores the recent policy emphasis on continuing professional development (CPD) and lifelong learning (DoH, 1999d; ENB, 1999).

- Participants in the project considered that pharmacology should be taught in relation to its application to nursing practice. Students valued teaching that was relevant to practice and teaching was evaluated poorly when 'scientific knowledge' was conveyed in the absence of clarity about its relevance to a nursing role. Again, this is consistent with previous Board-funded research findings (Eraut et al., 1995) and with the Board's (1999) advice to the UKCC concerning the need to improve the balance between biological, social and behavioural sciences and nursing. The application of these science subjects to practice, is again the issue here.

Communication style	Site 1	Site 2 Dip	Site 2 Deg	Site 3
Timing of taught component with clinical experience	X		X	
Establish links with PE skills and PK	X	X	X	
Importance of relationships in mental health nursing		X		
Address role and attitude to medication and information (ethics)		X		
Student group size >15			X	
Opportunities to practise dealing with difficult situations			X	
Adult bias of CFP			X	
Lacking in taught curriculum				X
Variations in prior exposure to formal teaching and theory base (Level 2)				X
Reliance on experiential knowledge				X
Facilitation of links between overarching specialist practitioner programme themes and patient medication education role				X
Explicit focus on patient medication education role (cf prescribing)				X
Actual curriculum base level	2	2	2	3

X = theme identified at Study Site

Table 7.4: Summary of education themes related to communication style

Patient education skills	Site 1	Site 2 Dip	Site 2 Deg	Site 3
Establish links with clinical experience	X			
Consolidate learning in practice with mentors	X			
Active engagement of students	X			
Link to learning contract competencies	X			
Consolidate learning in taught curriculum	X			
Links to pharmacology knowledge and communication style	X	X	X	
Lacking in taught curriculum				X
Variations in prior exposure to formal teaching and theory base (Level 2)				X
Reliance on experiential knowledge				X
Facilitation of links between overarching specialist practitioner programme themes and patient medication education role				X
Explicit focus on patient medication education role (cf prescribing)				X
Actual curriculum base levels	2	3	3	3

X = theme identified at Study Site

Table 7.5: Summary of education themes related to patient education skills

- The opportunity for students to practise integrating the knowledge and skills derived from the different sub-components of the medication education role, pharmacology and communication and education skills, was lacking at the study sites. Opportunities for such integration need to be available within the taught curriculum as a complement to integration and application in practice settings (Tables 7.6 and 7.7); this could occur, for example, through problem-based learning, role-play and case scenarios.

Pharmacology knowledge	Site 1	Site 2 Dip	Site 2 Deg	Site 2 post-reg	Site 3
Sufficient, structured classroom-based teaching	X	X			X
Opportunities in curriculum to apply PK to practice	X		X		
Timing within curriculum	X	X			
Timing with clinical placements	X	X	X		
Supported by practice-based learning with mentors	X				
Supported by self-directed learning, based on underlying knowledge	X				X
Formal testing of knowledge recommended		X			
Application to mental health nursing role			X		
Address depth and level			X		
Lecturer knowledge of and links with curriculum			X		
Balance between taught and self-directed learning			X		X
Structured approach for post-registration programmes				X	
Actual curriculum base levels	2	3	2	2	2

X = theme identified at Study Site

Table 7.6: Summary of education themes related to pharmacology knowledge

Education context themes	Site 1	Site 2 Dip	Site 2 Deg	Site 3
Curriculum time available vis-à-vis other curricular demands	X			
Variety of student placement and timing of PK input	X			
Integration within modular programme	X			
Importance of lecturer-student ratio in clinical areas		X	X	
Quality of mentorship variable	X	X	X	
Need for inclusion of medication education in practice assessment documentation and information	X		X	
Importance of allocated lecturer responsibility for integration and information across modules			X	
Assumptions regarding prior learning and experience				X
Lack of explicit facilitation of links				X
Focus on medication administration and prescribing	X	X		X

X = theme identified at Study Site

Table 7.7: Summary of education context themes

- Concern about variability of the learning experience in practice settings was also identified. The significance of this finding is underlined by the extent to which nurses in the clinical areas reported a reliance on learning in practice as preparation for their role in medication education, suggesting that the infrastructure of clinical practice needed reorganisation to support such learning. This finding lends support to the Government's proposals to strengthen practice-based learning for nurses, midwives and health visitors (DoH, 1999a) and to develop organisation-wide strategies to support CPD for all staff as a vehicle for delivering quality care within a clinical governance framework (DoH, 1999d). It also highlights the pertinence of the Board's advice to the UKCC that:
 - the preparation of mentors needs to be improved
 - sufficient numbers of experienced, qualified staff need to be available to provide mentorship
 - a partnership approach between higher education and service settings is required to formally acknowledge the value and academic worth of practice-based learning (ENB, 1999).
- There was an emphasis on medication administration and prescribing at Study Site 3, at the expense of medication education. This was also apparent in observation and interviews at all the study sites. Arguably, in the face of high workload and time pressures, the administration of medication was a more pressing priority in practice areas than providing patients with education about medication. Here, medication administration might be considered a more 'mature' concept than the 'immature' concept of medication education, with clearer delineation of the required knowledge base and competencies. The significance of the role of administering medicines to patients is not under-estimated; it is the recognition of the inter-relationship between the two roles that was seen to be necessary. As findings from Study Site 1 Clinical Area B illustrated, the administration of medicines provided an important opportunity for learning about medication which enabled practitioners to develop confidence in the knowledge and skills required for a medication education role. A focus on prescriptions and administering medicines in the absence of a systematic and evidence-based preparation for a medication education role, unnecessarily limited the contribution of nurses in maximising health gain through facilitating informed choice and adherence.

7.4 Concept analysis research for curriculum and practice development

Utilisation of a concept analysis methodology, as described by Morse et al. (1996a), was employed in this study in order to evaluate nurses' preparation for, and practice of, a medication education role. Figure 7.1 outlines the processes by which *practice maturity quotient matrices* and *curriculum maturity quotient matrices* (MQM) were developed and extended the concept analysis methodology as outlined by Morse et al. (1996a). Tables 7.8 and 7.9, deriving from Figure 7.1, illustrate how such processes may be applied in local contexts to identify strategies for curriculum and/or practice development.

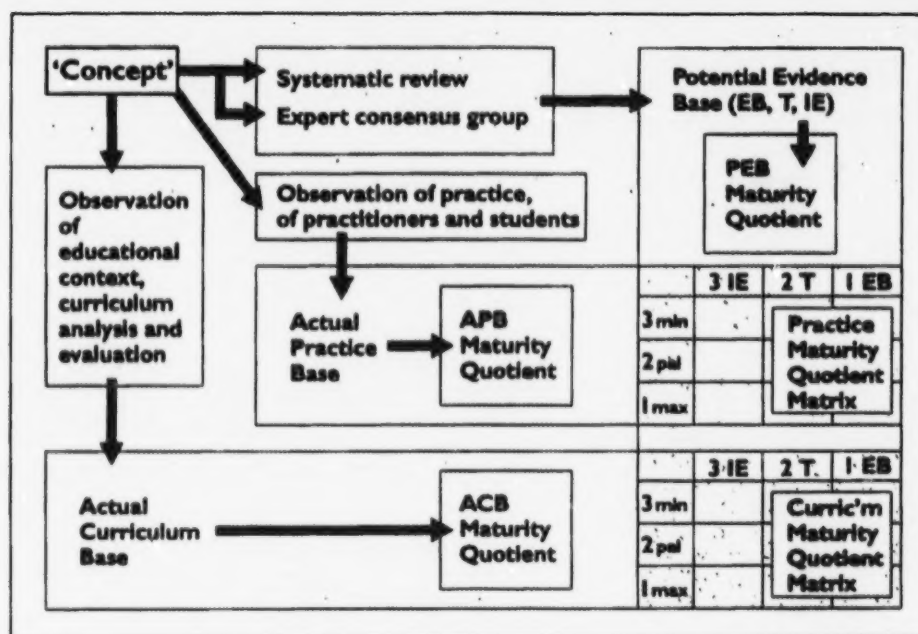


Figure 7.1: A model for development of Maturity Quotient Matrices

Actual practice base	Potential evidence base		
	3 Intuition/experiential	2 Transitional	1 Evidence-based
Level 3 Minimal	Practice base provides little opportunity for concept identification: Practice development critical	Practice base provides little opportunity for concept development: Review practice development and mentoring	Practice base provides little opportunity for concept delineation: Review of practice development and mentoring critical
Level 2 Partial	Practice base could be supportive of concept identification: Inductive approaches via reflection and interviews possible	Practice base could be supportive of concept development: - Use qualitative methods to collect data - Involve mentors	Practice base could be supportive of concept delineation: - Practice development possible - Mentor facilitation of students and practitioners
Level 1 Maximal	Quality practice could be supportive of concept identification and development: Inductive approaches via reflection and interviews possible	Quality practice could be supportive of concept delineation and comparison: - Use qualitative methods to collect data - Involve mentors and students in process	Quality practice could be supportive of concept clarification and correction: - Quantitative measurement and/or experiment possible - Subject concept to decision analysis deconstruction

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Table 7.8: Practice Maturity Quotient Matrix

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Actual curriculum base	Potential evidence base		
	3 Intuition/experiential	2 Transitional	1 Evidence-based
Level 3 Minimal	'Concept' buried in assumed permeated programme: Review critically to nursing curriculum and to application in practice Inclusion in curriculum not substantiated Concept identification	Only passing reference made to concept No cross-referencing between topic areas: Review curriculum with respect to location and inter-relations Concept development	Importance of concept to curriculum not realised – location, teaching, reliance on experiential learning: - Retrack links and teaching methods - Check relation to practice Concept delineation
Level 2 Partial	Check aetiology for inclusion in the curriculum Tradition? Personal? Concept identification and development	- Examine relations of concept to other areas of the curriculum - Clarify strength and visibility of permeation/integration Concept delineation	- Review inclusion of evidence base of concept in teaching material/method - Update systematic review to provide stronger basis to EB nursing Concept delineation
Level 1 Maximal	Quality androgogy Consider practice links for data collection and concept development	Quality androgogy Consider mentor/lecturer-practitioner roles to support concept delineation with respect to theory and practice	Concept should occupy key position in curriculum to provide EB nursing and concept refinement Key example for mentor/lecturer-practitioner links

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Table 7.9: Curriculum Maturity Quotient Matrix

This model of the development of MQMs mirrors the programme of research undertaken in the project. Systematic literature reviews, along with expert consensus, identified the evidence-based maturity of concepts and sub-concepts. Observation of clinical and educational settings using qualitative methods provided data on the current state-of-the-art of clinical and educational practice.

It is important to note, albeit on a different scale and with a different focus, that these processes already form part of nurse education programmes: the preparation of curricular material based on research findings and nursing theory; the audit of clinical placements; and the academic audit (subject reviews) of education programmes.

However, in the model described here, it is explicit that the contingent relations of these components provide the strategies and foci for clinical and educational development. To emphasise such relations, specific terminology is identified that reinforces the contingency.

A *potential evidence base* (PEB) is established by means of a systematic review of literature relevant to the concept under study. Literature is assessed in order to:

'... sort all content for the entire data set into categories and often (form) subcategories. The commonalities and differences of each category are noted and then compared with other parts of the data set, so that assumptions,

values and the content may be made explicit. In addition, when comparing several allied concepts, questions are asked of the literature that address each concept, and this process facilitates the identification of comparison between the categories and sub-categories for each concept.

(Morse et al., 1994; cited in Morse et al., 1996a: 264)

This process enables identification of a concept's level of maturity in terms of the adequacy of its definition, the nature of the evidence available and clarity of terminology. This delineates the concept from other concepts. It is also a snapshot-in-time evaluation of the level of maturity. It is a 'current' PEB since the evidence base of some concepts will be subject to a maturing process.

An expert consensus group can be used both to confirm dimensions of concepts identified from the literature review and to illuminate further dimensions based on experts' clinical or educational experience not apparent in published literature. Such experts might consist of educationalists, practitioners, patients or carers, depending on the concept being analysed.

In Chapter 3, maturity gradings were assigned to concepts: evidence-based (EB), transitional (T) and intuition/experiential (IE). In Figure 7.1 these gradings are referred to as the PEB Maturity Quotient. The term 'quotient' reflects the relativity of a current state against a standard, as in IQ. Here, PEB Maturity Quotient reflects the evidential base and stage of development of a concept. *Ideally concepts used in a discipline should be "mature"* (Morse et al., 1996a: 256) Being mature is the standard.

In Chapter 3, the process for evaluating actual practice, clinical and educational, was described. *Actual practice base* (APB) and *actual curriculum base* (ACB) levels were allocated in both practice and educational settings. These levels are also maturity quotients; actual practice and actual curricula were compared, relatively, with the PEB; maximal level, partial level and minimal level were assigned. Here the PEB Maturity Quotient provides the standard against which the quality of clinical or educational practice can be evaluated; APB and ACB Maturity Quotients are independent of the maturity of the concept, of the PEB. They only relate to the extent of the evidence used, whatever its level of maturity.

APB and ACB Maturity Quotients can be established through the use of qualitative interviews, observation and curriculum analysis, as used in this study. Such methods can be adapted to suit local contexts and time scales for curriculum planning agendas through, for example:

- the use or adaptation of existing clinical placement audit tools to reflect the concept of interest
- systematic, structured interviews with clinical staff on a concept of interest to complement a more general clinical placement audit
- focused group discussion with local experts
- small scale project development and evaluation.

Whilst APB and ACB Maturity Quotients are independent of the maturity of the sub-component concept, their relation to the PEB Maturity Quotient is critical in identifying the underlying 'cause' of the need (or not) for clinical and/or educational development. To assist such identification, these relations are (re)constructed in a MQM (Figure 7.1).

Each sub-component can be located in the MQM using two co-ordinates: its maximal/partial/minimal level derived from its APB or ACB Maturity Quotient and its EB/T/IE base derived from the PEB Maturity Quotient. Such location prescribes 'medicines' for development. Tables 7.8 and 7.9 show the MQMs in more detail and suggest generic 'causes' and solutions for the direction of development.

Development identified here in Tables 7.8 and 7.9 falls into two categories:

- the development of clinical (7.8) and educational (7.9) practice
- the development of the concept of medication education and its sub-components (7.8 and 7.9).

Whilst the development of clinical and educational practice is important *per se*, the development of an evidence base for nursing concepts is critical to the development of nursing theory and practice. Educationalists and practitioners need to recognise their role and responsibility in this process, not independently but in corroboration (ENB, 1999).

Tables 7.8 and 7.9 are self-explanatory and require no further comment here. They provide generic solutions to underlying 'causes' of clinical and educational stasis.

7.5 Curriculum and practice development matrix

To explore the two forms of development identified above, a further matrix is required. The curriculum and practice development matrix (CPDM) (Figure 7.2) derives from the same systematic approach that constructed the other MQMs.

The APB is juxtaposed with the ACB. This matrix can be seen in more detail in Table 7.10; the diagonal boxes (white) show that both clinical and educational practice need attention, could be developed or are currently maximising the utilisation of available evidence. The top right-hand corner of the table (pale grey) shows that clinical practice provides the model or reference point for curriculum planning. The bottom left-hand corner (darker grey) shows that the curriculum provides the model or reference point for the development of clinical practice. To illustrate the use of Table 7.10 in the process of development, three examples from Study Sites 1 and 2 are explored (Table 7.11).

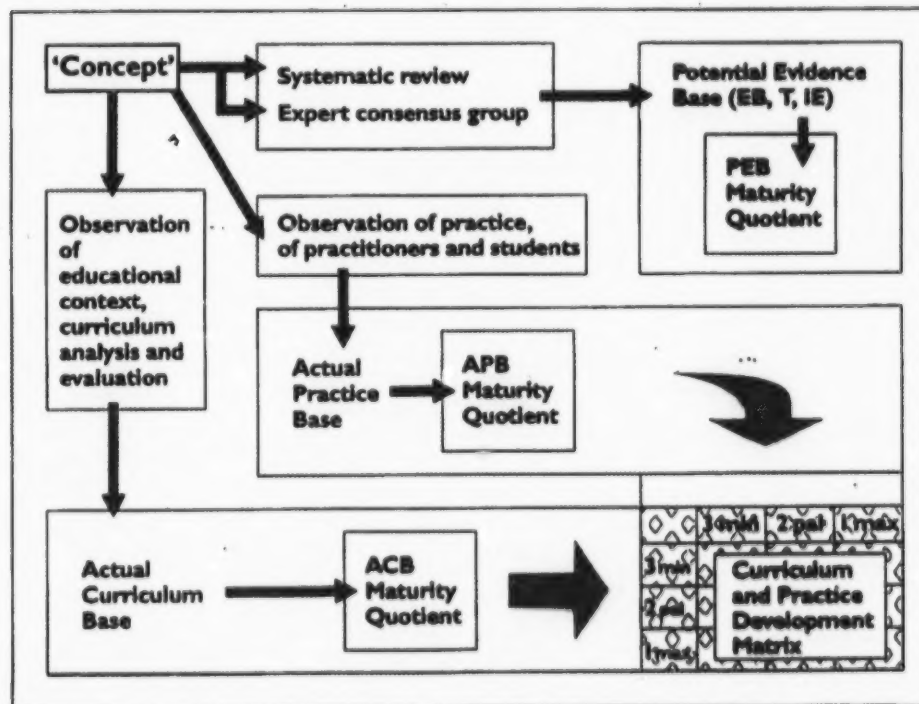


Figure 7.2: Curriculum and Practice Development Matrix

Actual curriculum base	Actual practice base		
	Level 3 Minimal	Level 2 Partial	Level 1 Maximal
Level 3 Minimal	Both practice and curriculum need attention	Practice provides reference point for curriculum planning	Practice provides model for curriculum planning
Level 2 Partial	Curriculum provides reference point for practice development	Both practice and curriculum could be developed	Practice provides model for curriculum planning
Level 1 Maximal	Curriculum provides model for practice development	Curriculum provides model for practice development	Both practice and curriculum are maximising available evidence

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Table 7.10: Curriculum and Practice Development Matrix

Actual curriculum base	Actual practice base		
	Level 3 Minimal	Level 2 Partial	Level 1 Maximal
Level 3 Minimal	Both practice and curriculum need attention	Practice provides reference point for curriculum planning	Example Z: Pharmacology Knowledge at Study Site 2, Clinical Area B and Educational Institution diploma programme
Level 2 Partial	Example X: Communication Style at Study Site 1, Clinical Area A and Educational Institution	Example Y: Patient Education Skills at Study Site 1, Clinical Area B and Educational Institution	Practice provides model for curriculum planning
Level 1 Maximal	Curriculum provides model for practice development	Curriculum provides model for practice development	Both practice and curriculum are maximising available evidence

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

Table 7.11: Examples of curriculum and practice development using CPDM matrix

7.6 Curriculum and practice development matrix examples

7.6.1 Example X: communication style at Study Site 1 Clinical Area A and Educational Institution

Findings indicated that in Clinical Area A nurses' communication style in delivering medication education could be considered as 'minimal' (Table 7.12). There was little evidence to suggest that interactions could be characterised as 'shared-decision making', 'developing patient autonomy' and 'working in partnership with patients'; theoretical characteristics considered important in communicating effective medication education. Thus, the APB was assigned as Level 3 Minimal.

In contrast, the ACB for Communication Style was evaluated as Level 2 Partial (Table 7.12). Communication skills were included in the curriculum and to some extent evaluated favourably by Study Site 1 participants.

The CPDM illustrated in Table 7.11 places these findings in Example X Box. Thus, the 'curriculum provides a reference point for practice development' here. By reference to Table 7.8 and Table 7.9, two suggestions are made: there should be a review of practice with involvement of mentors; and the relations of the concept of communication style should be examined with other areas of the curriculum, particularly in respect of the strength and visibility of permeation and integration and of clinical placements.

Both actions have the potential for moving the operationalisation of the concept of communication style to 'partial' practice and to 'maximal' curricular utilisation of the PEB; a downward, yet positive, vertical move in Tables 7.8 and 7.9, respectively. Given the state of

clinical practice, as described by the use of terms here, these actions should be prior to the consideration of any horizontal movement in the matrices; the enhancement of the concept by the use of qualitative methods.

Actual bases – practice and curriculum	Potential evidence base (PEB)		
	3 Intuition/experiential	2 Transitional	1 Evidence-based
Level 3 Minimal		CS (1A) PES (2)	PK (2)
Level 2 Partial	PC (1A) PC (1B)	MT (1A) PES (1A) CS (1B) MT (1B) PES (1B) CS (1) PES (1) CS (2)	PA&C (1A) PK (1A) PK (1B) PK (1)
Level 1 Maximal	PC (2B)	CS (2B) MT (2B) PES (2B)	PA&C (1B) PA&C (2B) PK (2B)

Level 1 Maximal: maximises use of potential evidence base (PEB)

Level 2 Partial: partially uses PEB

Level 3 Minimal: minimally uses PEB

PA&C Patient Attributes and Context

PC Patient Career

MT Medication Therapy

CS Communication Style

PES Patient Education Skills

PK Pharmacology Knowledge

Example X: Study Site 1 / Clinical Area A (1A)

Example Y: Study Site 1 / Clinical Area B (1B)

Example Z: Study Site 2 / Clinical Area B (2B)

Example X and Y: Study Site 1 Educational Institution (1)

Example Z: Study Site 2 Educational Institution (2) – diploma programme

Table 7.12: Curriculum and Practice Maturity Quotient Matrix

7.6.2 Example Y: patient education skills at Study Site 1 Clinical Area B and Educational Institution

Example Y (Table 7.12) relates to *patient education skills* at Study Site 1 Clinical Area B and the Educational Institution. Both APB and ACB were judged as Level 2 Partial. Within Study Site 1 Clinical Area B, patient education skills were partly in evidence. Some skills such as 'assessment of knowledge' and 'sequencing of the education' concerning medication were observed (Table 7.12). Nevertheless, the use of a more comprehensive range of patient education skills across the full complement of staff in Clinical Area B was possible, indicating '*practice could be developed*'. Similarly, whilst patient education skills were included in the curriculum at Study Site 1, the findings indicate that the '*curriculum could also be developed*', for example, by creating opportunities for consolidation of learning in practice and by establishing such skills as part of the competencies of learning contracts (Table 7.12). These developments, again, have the potential for movement to maximal status. However, here, compared to Example X, both clinical and educational practice also have the potential for concept development and delineation; horizontal, 'maturing' moves from left to right in Tables 7.8 and 7.9, respectively.

The third example, selected to illustrate how the use of the CPDM provides strategies for action, concerns pharmacology knowledge at Study Site 2 Clinical Area B and the Educational Institution diploma programme. Here, APB was graded as Level 1 Maximal. Data collected at this site revealed that a full range of sub-component contents were being utilised to maximum effect in medication education interactions by nurses in Clinical Area B (Table 7.12).

Conversely, pharmacology knowledge included in the diploma programme was graded as Level 3 Minimal (Table 7.12). Evaluative data showed a lack of formally-taught pharmacology in the curriculum, leaving students feeling unprepared for practice. This example, by its location in the CPDM, has the potential for demonstrating how *'practice provides a model for curriculum planning'*. As is suggested by Table 7.9, *'the importance of the concept to curriculum is not realised'*.

- Designers should re-track links and teaching methods, involving mentors. The clinical practice area has the potential for concept clarification and correction (see Table 7.8), processes that could underpin their academic colleagues' corrective and clarifying curricular development.

7.7 What counts as Making a Difference?

The concept analysis methodology, the model for curriculum and practice development utilising such methodology and Examples X, Y, and Z are *what counts* as further research. Such a claim is possible since accountable, responsible educators and practitioners, in corroboration, are now in a position to undertake:

- practice development
- curriculum development.

Such practice and curriculum development will ensure recognition that:

- The application of evidence in practice is likely to be context-dependent. However, it is crucial that nurses are able to undertake skilled, individualised and ongoing assessments of patients' and carers' needs in order that information and education provided fulfils actual and potential requirements for medication management, and avoids the danger of inappropriate generalisations of such information needs over time.
- Consideration should be given to the provision of proactive, preventative information within the context of skilled and individualised assessments and a patient-centred philosophy of care. This will help ensure that patients and carers are equipped with information that enables them to deal with medication issues that may arise in the absence of ongoing contact with health care professionals. It may also contribute to raising expectations and changing patient and carer preferences about the depth and breadth of information that is desirable within such interactions.
- Nurses need adequate pharmacology knowledge in order to fulfil their roles in medication education, front-line and ongoing monitoring of medication outcomes and liaison and negotiation with other health care professionals. Consideration needs to be given to identifying appropriate and sufficient curricular content related to pharmacology. Additionally, a balance needs to be struck between taught content and the facilitation of skills in students to enable self-directed and lifelong learning in the spirit of continuous professional development.
- Attention needs to be given to defining and clarifying the competencies required for a medication education role within different clinical environments and at different levels of practice. This debate should take place in the broader context of developing outcome-based curricula that specify national core competencies and national standards and skills.

Such definition and clarification will enable the inclusion of appropriate knowledge and skills that are consistent within and between educational institutions and various programmes of study.

- Pharmacology should be taught in relation to its application to nursing practice. This principle needs to be considered in relation to lecturers selected to teach pharmacology, and opportunities within curricula for facilitating application of knowledge to practice issues through, for example, enquiry-based learning.
- There is a requirement to strengthen practice-based learning, both for pre-registration learners, and to enable the continuing professional development of qualified staff. The availability of well-prepared mentors and role models in practice contexts is crucial here.
- Nurses' important role in medication administration, and increasingly, prescribing, should not overshadow the complementary function of educating patients about medication. There needs to be sufficient emphasis on the latter within educational curricula and in practice contexts in order to maximise nurses' contribution to medication-related encounters and thus the health gains from medication experienced by patients. Nurses' ongoing contact with, and monitoring of, patients illustrates the importance of breaking with traditional role boundaries, such as those that limit the prescription of medicines to the medical profession only.

But, arguably more importantly, by engaging in this process of development educators and practitioners will be able to contribute to:

- the audit of the evidence base of medication education, its components and sub-components, through data collection and the demonstration of outcomes
- the development of the maturity of the concept of medication education, its components and sub-components
- the field-testing of the model for curriculum and practice development.

It is only when maximal educational provision and maximal exemplars of practice of mature component concepts are in place, that nurses can begin to understand how dramaturgical decision-making combines *patient scenario* with *clinical judgement* to provide iAction. This project sets the *a priori* conditions for such further research.

Making a Difference and Continuing Professional Development (DoH, 1999a; 1999d) emphasise the importance of a corroborated effort to bring together educational preparation and continuing professional development in a context of providing continuous improvement to the quality of care. Maximising the contingency of the strands of these twin developments has implicitly underpinned the rationale for this project. Its conclusions have made such underpinning explicit. The use of concept analysis research to explore relatively the bases of education and clinical practice, with a subsequent exploration of their contingent relation, has produced a dynamic model for the preparation of nurses as educators of patients, clients and carers about medication. Such a model has application to other concepts of nursing iActions and a serious contribution to make to corroboration, professionally, organisationally, theoretically and conceptually.

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RESEARCHING PROFESSIONAL EDUCATION

*A series from the English National Board
for Nursing, Midwifery and Health Visiting*

Nursing and Medication Education: concept analysis research for curriculum and practice development

Sue Latter
Paul Yerrell
Jo Rycroft-Malone
David Shaw

This report, in the Board's series *Researching Professional Education*, has been published to make Board-commissioned research readily available to policy makers, practitioners, researchers and educationalists.

The report contains detailed evaluation of nurses' contribution to medication education, preparation for this role, and the impact of contextual factors on education and clinical practice. The development of concept analysis research as a tool for analysing and developing nursing concepts is explored.

The report will be of value to those involved in the planning and delivery of health care professional higher education programmes, educationalists and practitioners concerned with clinical practice development and health care researchers, particularly those interested in nursing concepts, theoretically and practically.

More specifically this report will be of interest to those responsible for teaching and researching pharmacology, communication skills and patient education within nursing and health care practice.



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JULY 2000

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research
H I G H L I G H T S

***Nursing and Medication Education:
Concept Analysis Research for
Curriculum and Practice
Development – The NAME Project***

Abstract

The aims of the Project were:

- To identify and deconstruct the nurse's role in medication education
- To identify the educational preparation required for this role and to evaluate current provision

These were addressed through a literature review, data collection in practice and education contexts and the application of concept analysis methodology.

From the literature review, the overarching concept of medication education was considered to be made up of the components *patient scenario*, professional knowledge-based *clinical judgement* and sub-components relating to the therapeutic use of medicines by patients and to the pre-requisite skills and knowledge of health care professionals. This conceptual framework identified the varying degrees of maturity of the sub-components in terms of the nature and extent of the supportive evidence currently available for predicting medication education outcomes. This evidence provided a base from which to consider the 'reality' of practice and educational preparation for medication education.

The effectiveness of nurses' application of pharmacology knowledge, communication and education skills with different patient groups was observed within practice settings at three case-study sites, and illuminated the factors, individual, professional, educational, clinical and organisational that operated to facilitate or inhibit practice. An evaluation of the effectiveness of education curricula in preparing nurses for a medication education role was conducted at the same sites.

Utilisation of a concept analysis methodology, as described by Morse *et al* (1996), was employed to develop *practice* and *curriculum maturity matrices*. It further illustrated how such processes might be applied in local contexts to identify strategies for curriculum and/or practice development.

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Main Findings

Literature review

1. The literature review and focus groups established the components (*patient scenario and clinical judgement*) and their sub-components that nurses need to take into account in order to be clinically effective in providing education about medication. *Patient scenario* comprised of *patient attributes and context, patient career and medication therapy*. *Clinical judgement* comprised of *communication style, patient education skills and pharmacology knowledge*. (See Figure 1.) These components varied in the type of evidence that supported their importance in medication education. The 'evidence' included research-based evidence, theoretical models, ethical or ideological principles, expert consensus and published opinion papers.

Practice contexts

2. Observation and audio-recordings of practice across the study sites identified that nurses' role in medication education was multi-dimensional, ranging from interactions with patients to liaison with health care professionals and carers. Nurses had continuous or regular patterns of contact with patients, often in the absence of other health care professionals, including doctors. This contributed significantly to their role in front-line, on-going monitoring of medication outcomes and side effects, together with liaison and negotiation with doctors to facilitate prescription changes. This adds weight to the importance of nurses' ability to prescribe medicines as part of health care delivery that is flexible, accessible and responsive to need.

3. Nurses drew on and applied knowledge and skills from the components identified above in carrying out these roles.

4. The use of such knowledge and skills was, to some extent, context-dependent (see 6 & 7 below). However, nurses did not make explicit, systematic use of these components, and were not aware of the strength and nature of the evidence that predicts their effectiveness in informed medicine-taking.

5. Nurses' interactions about medication were generally limited to simple information-giving, for example: name, purpose, colour, number of tablets to be taken, and time and frequency of administration.

6. Characteristics of patients, such as the acuity of their illness and age-related memory loss, contributed to an explanation for these limited interactions. Many patients also expressed preferences for minimal information and involvement in decision-making. However, some patients interviewed expressed unmet information

needs; a strong feature to emerge from the carer focus group discussions. Carers reported that health professionals did not always share information or acknowledge their expertise. Carers wished to be informed about medication side effects and interactions, and were often reliant on other sources of information, for example, community pharmacists and medication dictionaries.

7. A number of contextual factors influenced nurses' ability to educate patients about medication. This role was facilitated when the practice setting had a person-centred philosophy of care, and where continuous and therapeutic nurse-patient relationships were enabled to develop. It was inhibited by lack of time, high workload and lack of availability of permanent, qualified ward staff, in addition to the patient characteristics cited above.

Education contexts

8. Observation, interviews and curriculum analysis identified that, within the curricula studied, there was no clear delineation of the competencies required for a medication education role within different clinical environments and at different levels of practice.

9. There was a lack of attention within education curricula to the components contributing to effective medication education and the nature of the evidence bases underpinning them.

10. An expressed need for greater curricular time devoted to pharmacology was identified from the case study sites and the national survey. Students and lecturers felt that taught pharmacology needs to be made applicable and relevant to nursing practice. Study participants also highlighted the need for a balance between taught pharmacology and self-directed, lifelong learning in practice.

11. There was a lack of opportunity within the curricula for students to practise integrating the knowledge and skills derived from the different components of *pharmacology knowledge*, and *communication and patient education skills*.

12. Concerns were expressed about the variable standard of learning experiences in practice with mentors. The significance of this finding was underlined by qualified nurses' reports of reliance on 'learning in practice' as preparation for their role in medication education.

13. An emphasis on medication *administration*, as opposed to medication education, was highlighted during the course of data collection at the education institutions.

Concept Analysis Research for
Curriculum and Practice
Development



HIGHLIGHTS

14. Utilisation and development of a concept analysis methodology, as described by Morse *et al* (1998), was found to be applicable to the evaluation of nurses' preparation for, and practice of, a medication education role.

15. Systematic literature reviews, along with expert consensus, identified the evidence-based maturity of concepts and sub-concepts – the *potential evidence base* (PEB).

16. Observation of clinical and educational settings with reference to the PEB provided data on the current state-of-the-art of clinical and educational practice – the *actual practice & actual curriculum base*. (See Figure 2.) That is, there was maximal, partial and/or minimal use of the available evidence in practice and educational settings.

17. The contingent relations of these bases provide the strategies and foci for clinical and educational development and identify when both clinical and educational practice need attention, could be developed or are currently maximising the utilisation of available evidence. They further identify when clinical practice provides the model or reference point for curriculum planning and when the curriculum provides the model or reference point for the development of clinical practice. (See Figures 2 & 3.)

18. This model for curriculum and practice development utilising concept analysis methodology is *what counts* as further research. Such a claim is possible since accountable, responsible educators and practitioners, in corroboration, are now in a position to undertake:

- Practice development
- Curriculum development

19. But, arguably more importantly, by engaging in this process of development educators and practitioners will be able to contribute to:

- The 'audit' of the evidence base of medication education, its components and sub-components, through data collection and the demonstration of outcomes
- The development of the maturity of the concept of medication education, its components and sub-components
- The field-testing of this model for curriculum and practice development

Contribution to these processes will ensure that 'maximal' educational provision and 'maximal' exemplars of practice of 'mature' component concepts are in place, such that nurses can then begin to understand how decision-making combines *patient scenario* with *clinical judgement* to provide interaction options with patients. (See

Figures 1 & 3.) This Project sets the *a priori* conditions for such further research.

Making a Difference and Continuing Professional Development (DH, 1999a; 1999b) emphasise the importance of a corroborated effort to bring together educational preparation and continuing professional development in a context of providing continuous improvement to the quality of care. Maximising the contingency of the strands of these twin developments has implicitly underpinned the rationale for this Project. Its conclusions have made such underpinning explicit. The use of concept analysis research to explore relatively the bases of education and clinical practice, with a subsequent exploration of their contingent relation, has produced a dynamic model for the preparation of nurses as educators of patients, clients and carers about medication. Such a model has application to other nursing concepts and a serious contribution to make to corroboration, professionally, organisationally, theoretically and conceptually.

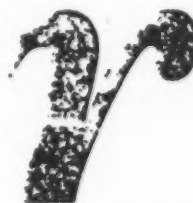
Method

To construct the overarching conceptual framework for medication education, literature reviews were conducted in the following subject areas:

- Concordance and compliance, and associated literature from health psychology
- The application of patient education principles
- Health education and promotion as applied to medication education
- Pharmacology knowledge, the pre-requisites for nursing practice

These reviews were complemented by two focus group discussions.

Case studies of education (n=3) and practice (n=7) contexts were used, focusing on adult, care of the older person, mental health and community nursing. Methods used to collect data in practice were: audio-recordings (n=37) and observation (n=48) of nurse-patient interactions about medication, post-interaction interviews with nurses (n=29) and patients (n=39). Focus group discussions (n=3) with carers were also conducted within the case study sites. In education institutions data collection methods were: focus group discussions (n=3), interviews with key personnel (n=14), observation of teaching sessions (n=27), post-observation interviews with students (n=17) and curriculum analysis. Eighty-four percent of education institutions in England (n=49) also participated in a national postal survey.



Observational and interview data relating to educational preparation and to interaction options with patients exercised in clinical practice were collected using techniques derived from grounded theory, the ethogenic approach and ethnography. These methods, linked by their epistemological underpinnings of induction and the subsequent analysis were used to

...organise and consolidate textual and observational data into categories, to identify the characteristics along with the antecedents and consequences of the characteristics, and to compare data so that conceptual boundaries may be identified. Comparison of one category with another enables the identification of inclusion/exclusion criteria for each concept, and this process facilitates the identification of boundaries. Techniques of synthesis and abstraction enable the description of the concept in precise analytical terms. Synthesis and abstraction are essential to lift the analysis beyond mere description of an experience toward true conceptualization.

(Morse et al, 1996; p261)

Understanding, exploring concepts by literature reviews and qualitative research methods identifies the level of maturity of the concept

...as revealed by their internal structure, use, representativeness, and/or relations to other concepts.

(Morse et al, 1996; p255)

Morse et al (1996; p255/269) suggested that qualitative methods were indicated for immature concepts in that they point up the purpose for further concept related activities such as: concept identification, development, delineation, comparison, clarification and correction. Quantitative methods can be used similarly for concept refinement/measurement and validation of mature concepts.

The knowledge base requirements for these concept analysis activities located medication education within the 'immature' as opposed to 'mature' concept category. Consequently, data collection methods were selected which were consistent with qualitative methodological paradigms. Morse et al (1996) noted that data collection techniques could be used relatively independently of their original paradigms and separately from original purposes. When viewed as a series of techniques for sorting data, developing, delineating and refining categories, the utilisation of qualitative methods for the purpose of concept analysis becomes apparent. Thus, this project employed techniques as shown in Table 1.

Qualitative methodology	Derivative technique	Application for concept development
Ethnography	Interviews	Description of concepts from experience
Ethnography	Participant observation	Detailed description of behaviours
Grounded theory Ethogenic approach	Interviews & focus groups	Identification of antecedents and consequences
Grounded theory	Constant comparison	Identification of conceptual boundaries

Table 1: Qualitative techniques that facilitate concept analysis and development utilised in the Project (adapted from Morse et al, 1996).



Project Details

- Project timescale: April 1997-1999
- Commissioned by the English National Board for Nursing, Midwifery & Health Visiting

Generally, this report will be of value to all those involved in the planning and delivery of higher education health care professional education programmes as well as educationists and practitioners concerned with practice development.

More specifically, the detailed description of the preparation for a medication education role and the evaluation of nurses' medication interactions with patients and clients will be of particular interest to those responsible for this aspect of curriculum design and delivery. Similarly, it will provide logistical and practical insight for those involved in mentoring and practice development; from medication administration to medication education. Consumer groups with an interest in concordance and information about medicines will also find the report pertinent to users and their choices about medication.

The full report, to be published in the *Researching Professional Education Series*, is available from:

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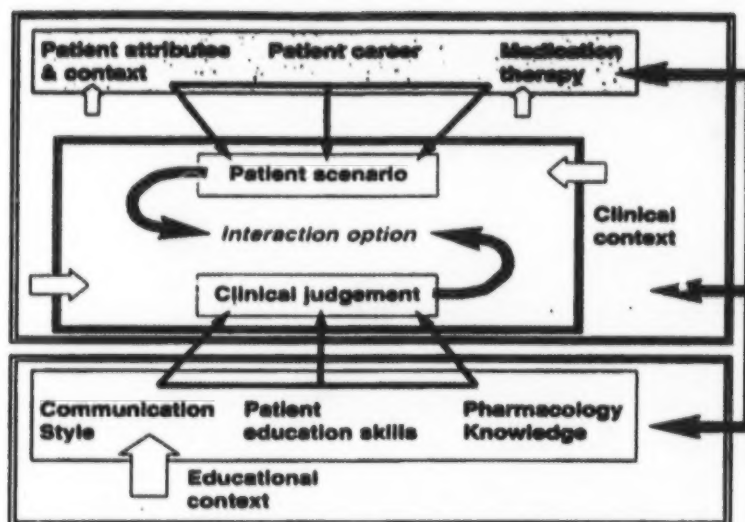


Figure 1

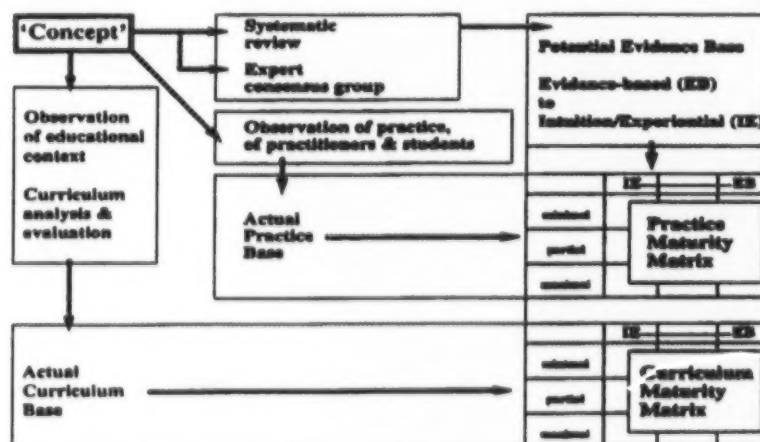


Figure 2

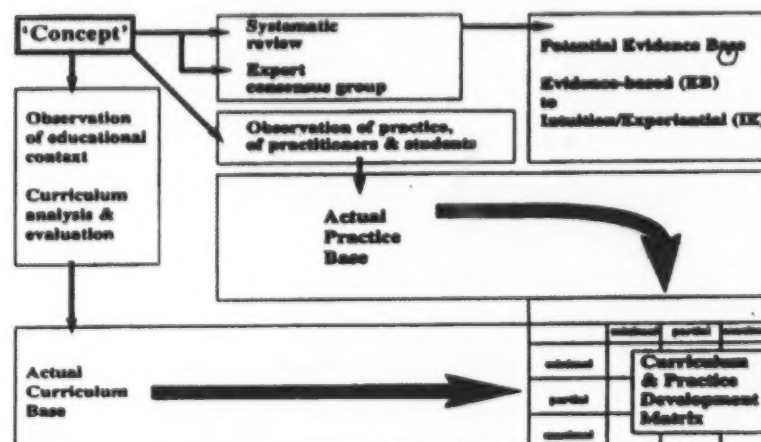


Figure 3

RESEARCH HIGHLIGHTS

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